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ORIGINAL LECTURES.

THE ETIOLOGY, MORBID ANATOMY, VARIETIES, AND TREATMENT OF CLUB-FOOT.

Two Clinical Lectures delivered at the Philadelphia Hospital.

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LECTURE II.

GENTLEMEN: Our last meeting closed with a brief description of the primitive forms of club-foot. We now pass to the consideration of the treatment of talipes in general, such modifications as may be necessary to correct the deformity in any special case which may come before us being deferred until we discuss the compound forms. Properly to cope with these conditions, it is essential that you should thoroughly comprehend the factors, pathological and mechanical, which produce them. Because of the lack of exact knowledge upon the subject by the profession, many cases of deformity remain uncured, and scores of children, who could otherwise be relieved, are left to the care of inconsiderate instrument-makers. It is only by the intelligent application of measures fitted exactly to the case, that success can be achieved; and the knowledge requisite to do this is not possessed by the mechanician in any greater degree than is the knowledge necessary properly to care for a medical case a part of the education of the apothecary. Nor has the training of the general practitioner been such as to make him an adept in this branch of surgery, and when it is considered how few are his opportunities for seeing many such cases, it is not strange that extreme deformities are frequent, and that their existence and progression should be an opprobrium. It is only by the dissemination of knowledge by clinical teaching, and the establishment of institutions dedicated to the care of these special cases, that a better state of things may be hoped for, and the importance of such measures cannot be overestimated.

The object of treatment in club-foot is not only to remove the existing deformity, but to restore to the foot its functions; and to do this many procedures have been resorted to, which have been in turn discarded. We may consider the methods now in use as *mechanical* and *operative*. First among the former is manipulation, applied so as to stretch the contracted tissues, passive motion, massage, shampooing, and electricity being used the while to aid in the restoration of function. The hand, if pressure and traction to the contracted tissues could be continuously applied by it, would, no doubt, constitute the best instrument for the relief of club-foot; the apparatus which is best adapted to take its place is that which should be relied upon in the mechanical treatment of the deformity.

Massage and electricity serve, in paralytic cases, to restore, as far as possible, the functional activity of the parietic muscles, and should always be employed as adjuvants in such cases.

Tenotomy for the division of contracted tendons, called aponeurotomy when performed upon fasciæ and aponeuroses, was resorted to first by Delpech, of Montpellier, France. It was not, however, generally employed until Stromeyer, of Hanover, rendered it popular. Little introduced the operation into England, and Dickson, of South Carolina, first performed it in America. To Deltmold, of New York, and Mütter, of this city, however, is due much of the credit of making the operation popular in this country. Opinions differ as to the indications for tenotomy and the proper time for its performance; whether, for instance, in cases of congenital talipes, it should be done prior to the time at which the child is able to walk, or subsequently. No difference of opinion can exist as to the advisability of early operation in cases in which the nature or extent of the deformity renders correction by mechanical means alone impossible; but as experience is the only guide to discrimination, mechanical appliances should always be granted a fair trial before resorting to operation. Rigidity, or the reflex spasm caused by point pressure mentioned by Sayre, is not in itself a safe criterion, nor does excessive deformity, taken alone, furnish a reliable indication.

Retentive dressings, such as splints of silicate of soda or plaster of Paris, are used, either alone or after tenotomy, serving to retain the foot in the position acquired after manipulation or operation. The rubber muscle advocated by Richard Barwell, of London, and extensively used by Sayre, may be employed to take the place of paralyzed muscles; or Scarpa's shoe, as variously modified, may be applied to fix the foot and exert traction.

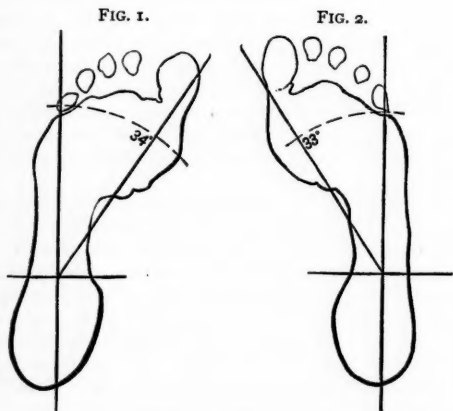
As I mentioned to you at our last meeting, the type of club-foot with which you will most frequently meet is talipes equino-varus. The principles of treatment appropriate to the mechanical conditions present can be applied to any of the other forms. This deformity is well illustrated by the case I now show you.

CASE II. *Congenital double Talipes Equino-varus; Mechanical extension; Recovery.*—Richard C., æt. four months, referred to my care from the Obstetrical Department of this Hospital. The deformity, which in this case affects both feet, takes place upon an antero-posterior and a transverse plane, combining elevation of the heel, *equinus*, and inversion of the foot, with elevation of the internal border of the sole, *varus*. The os calcis is drawn upward by the contraction of the gastrocnemius and soleus, and rotated in such a manner that its posterior border is turned outward and its anterior border inward. The bones of the tarsus, following the direction of the os calcis, are inverted, and the inner border of the sole raised by the action of the tibialis anticus. The altered relation of the bones of

the tarsus leads to alteration in form, especially of the articular facets; and some have considered these alterations as causative. This is by far the most frequent of the congenital forms of club-foot, and it has been argued that arrest of development in bones and muscles is the principal etiological factor. As the various theories on the subject were discussed in our former clinic, they need not detain us here.

The lateral deflection of the anterior portion of the foot, as compared to that of the normal imprint, is well shown in the following cuts. The outline tracings are from impressions of the feet of patients suffering from various deformities, obtained after the method advocated by Rohmer (*Les Variations de Forme Normales et Pathologiques de la Plante du Pied*, Thèse, Nancy, 1879), consisting of first covering the plantar surface of the foot with lampblack, which leaves a correct impression of the sole upon white paper, on which the patients are then requested to walk. To obtain a correct basis of measurement, and still further to carry out Rohmer's researches as a guide to treatment, I selected the medio-tarsal joint as a base line of measurement; erecting upon it a perpendicular corresponding to the long axis of the os calcis. As they are comparatively stable structures in all deflections from the normal condition of the foot, the position and character of deformity could be readily determined by a comparison of the degrees of variation.

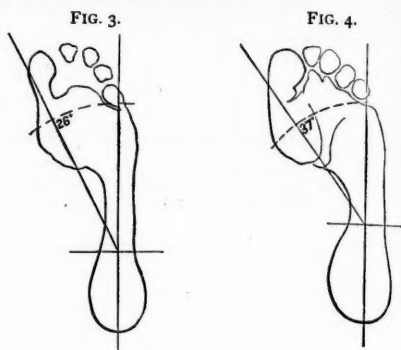
In the thirty-two normal feet measured, I have found the angle of deflection, which is represented by an imaginary line passing through the head of the metatarsal bone of the great toe, to range between 26 and 37 degrees (average, 20 males, 34.8 degrees; 12 females, 31½ degrees); typical examples may be seen in Figs. 1 and 2, males, and Figs. 3 and 4, females.



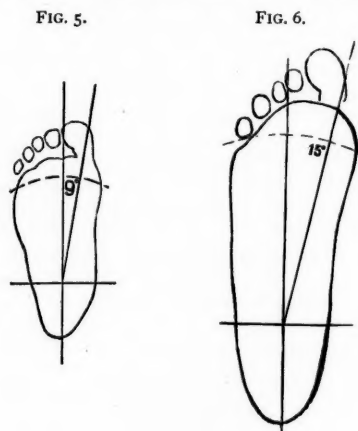
In valgus, on the contrary, the angle of internal deflection is reduced to from 12 degrees in moderate cases to 5 degrees in extreme ones, illustrated by Figs. 5 and 6, which represent the imprint of patient's feet suffering from acquired "flat-foot" of rachitic origin. From an examination of seven cases, I have ascertained the average deviation to be about 8¼ degrees.

The adduction of varus has in two instances reached an internal rotation of 63 degrees. I consider all feet that have an internal deviation in excess of 40 degrees

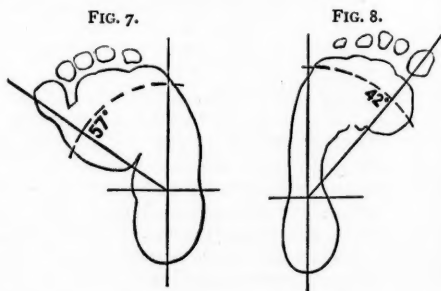
as abnormal. An examination of fourteen cases of varus yields an average of 51 degrees.



This method of measurement I believe to be of importance as furnishing us with an excellent and accurate



guide to the amount of deformity, as well as affording an opportunity of determining the improvement that may follow any plan of treatment instituted.



In the correction of equino-varus, as in that of the other compound forms, it is best to divide the process of rectification into two stages, the object being to overcome one of the factors of the deformity before attacking the other. The reason for this will be sufficiently obvious, when it is considered that the altered relations of

the tissues of the foot take place upon two planes at right angles to each other. Our endeavor then should be directed first to the lateral or varus element of the deformity. Manipulation should be systematically used, and while sufficient in very mild cases, is of great service as an adjuvant in severe ones. It should be applied several times daily, and in the following manner: The heel is firmly grasped by one hand, while with the other the anterior portion of the foot is gradually and steadily brought into a position of valgus, and held there for a few moments, then allowed to return to its abnormal position. After the manipulation has been repeated several times at short intervals, the foot may be placed in any light dressing. This splint will retain the foot in its corrected position, and may be modified from time to time to suit the lessened amount of varus. It may consist of material suited to the case. In the milder degrees of the deformity, adhesive plaster wound around the foot and attached to the fibular aspect of the leg answers the purpose, but when greater strength is required splints made of leather, gutta-percha, or hatters' felt may be moulded to the parts, and secured by a roller bandage. These have the advantage over fixed dressings of plaster of Paris in allowing inspection as frequently as may be desired, together with the application of massage, electricity, etc.

But the majority of cases of varus cannot be cured by such simple means. As in this case, which is typical of congenital equino-varus, we have absolute deformity to overcome; tendons and muscles are shortened, and the tissues structurally altered. The so-called

tissues involved, or, after a fair trial of these, operations which will divide the resisting structures.

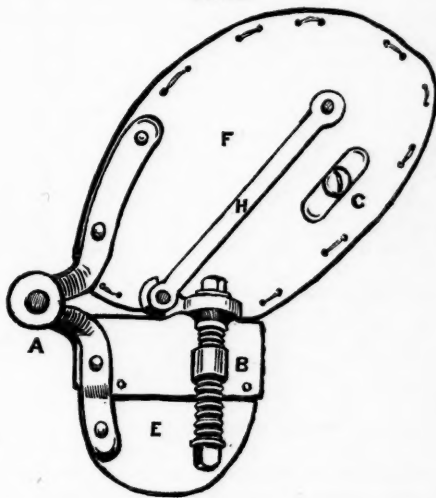
In such cases the shoe which I now show you (Fig. 9) is of the greatest service. It is a modification of Taylor's ankle support, and in its original form was devised by Shaffer, of New York. To this brace I have given more power by substituting in the sole plate for his extension bar a triple thread screw worked by a key at "B", and by throwing the centre of motion further to the outer side of the sole at "A" (Fig. 10). The in-

FIG. 9.



"mild measures" will not avail, and time occupied in the trial is wasted. Nothing will be of benefit except the application of instruments, which by their accuracy of construction and power will appropriately stretch the

FIG. 10.



strument consists of a steel trough fitted to the inner side of the leg extending from the upper part of the tibia to the internal malleolus. A hinge at "C" (Fig. 9), the direction of which is such as to allow pressure exerted upon it at right angles, to operate upon the anterior or lateral deformity, connects this trough with a continuation, or foot portion, which is joined by a plate to receive the foot by an antero-posterior joint, so that the shoe may be accurately adjusted to the "equinus" element of the deformity. The endless screw which I show you at "A" (Fig. 9) is operated by a key, and acts through this hinge upon the anterior portion of the foot. The sole is divided opposite the medio-tarsal joint, and by means of the screw "B" (Figs. 10, 11) acting upon the centre of motion at "A" allows of extreme and powerful abduction of the anterior part of the foot. The apparatus having been applied to fit the deformity, and secured by a bandage ("F F"), the foot is thrown into a position of valgus by means of the screw "A" (Fig. 9) acting upon the hinge "C," and this is supplemented by applying the force of the screw in the sole plate "B" (Fig. 10), which still further acts upon the anterior deformity. It is better to use the apparatus by stretching the tissues several times in succession, and after allowing them to relax, to adjust the brace to the corrected position. Having by these means overcome the lateral deformity, as illustrated in Fig. 12, our attention must be directed to the antero-posterior or equinus element.

To correct this deformity by mechanical means, it is necessary to apply an instrument which, through

the tendo-Achillis, will elongate the contracted posterior muscles of the calf. To accomplish this, many modifications of Scarpa's shoe have been devised. They consist of two steel uprights extending from the

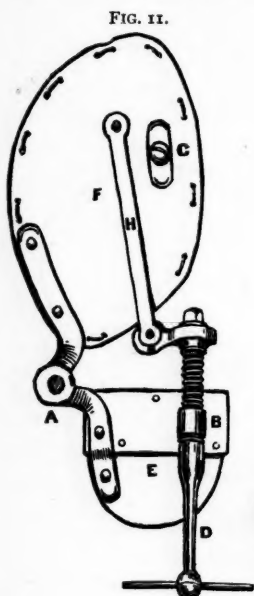


FIG. 11.



FIG. 12.

upper part of the tibia to the ankle-joint, and are attached to a heel-cup and sole to hold the foot, the heel being strapped in its place by means of a band of webbing, bandage, or similar material passing over the



FIG. 13.

instep. The sole may, or may not, be divided opposite the medio-tarsal junction. At first sight, such an apparatus would seem to fulfil the indication of applying

a force sufficient to flex the foot and stretch the tendo-Achillis, but in practice we find that as the necessary power is exerted, the centre of motion in the instrument being opposite the ankle-joint, the heel-cup slips away from the os calcis, and the posterior border of the foot is found resting upon the top of the heel-cup. To obviate this, Shaffer has in his extension shoe, which I now proceed to apply to this patient (Fig. 13), divided the sole of the brace opposite Chopart's joint, and attached to the anterior portion or sole an extension bar which is worked by a key introduced beneath the heel-cup at "B". The shoe having been applied *extended* to an angle corresponding to the angle of deformity, and the heel secured in its place by a strap passing over the instep "E," the os calcis is further secured by a strap "D" passing around it posteriorly and attached to buckles upon either side of the anterior portion of the sole plate. When flexion is made by the key at "A," which acts upon the endless screw opposite the ankle-joint "C," the tendency of the heel, as you see in Fig. 14, is to slip away

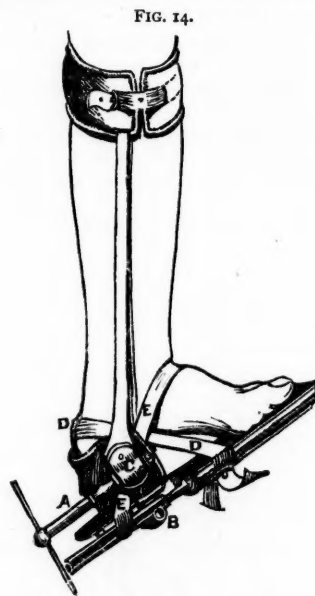
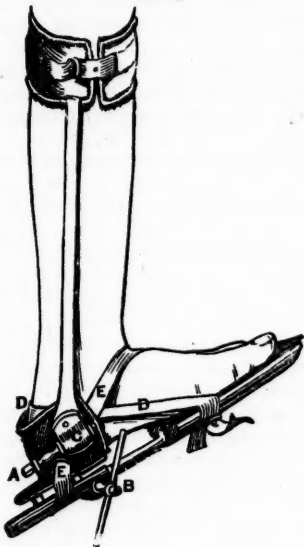


FIG. 14.

and rest upon the upper border of the heel-cup, and the degree of flexion of the foot does not correspond to that of the brace. If now, we insert the key below the heel-cup at "B," and throw the anterior portion of the sole forward, the os calcis is dragged upon by the strap passing over it at "D," and the centre of motion is transferred from a point opposite the ankle-joint, to a point represented by the centre of the strap "E" which passes over the instep, and the heel descends until it rests upon the extension bar. The tendo-Achillis is thus thoroughly put upon the stretch, and may be felt as a tense band (see Fig. 15). The operation is repeated several times at each sitting, and the amount of flexion thus gained is held by readjustment of the brace in the acquired position. No danger need be apprehended from interference with the circulation, if proper precautions be observed; the pressure is not continuous, being rather a *momentary overstretching*, followed by relaxation.

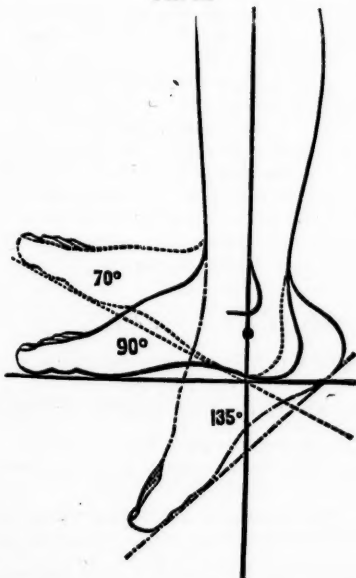
The foot should be inspected daily. After the treatment has resulted in bringing the foot to a right angle with the leg, a retention-shoe with stop-joint should be worn to keep the foot in the corrected position, and a

FIG. 15.



similar apparatus must be applied during the night throughout the treatment. Here let me remark that a cure is not effected when the amount of possible flexion of the foot forms a right angle with the tibia.

FIG. 16.



Referring to the diagram (Fig. 16), you will observe that the normal foot in extreme flexion forms with the leg an angle of about 70 degrees, and at the ankle-joint

motion is possible, in the normal condition, through an arc of which the extremes are represented by 135 degrees of extension, and 70 degrees of flexion. Our endeavor in the treatment of talipes equinus should be to make the acquired flexion reach this amount as nearly as possible. In connection with this subject, I wish to call attention to the existence of cases of *incomplete equinus*, designated "non-deforming clubfoot." In this condition flexion is impossible beyond 90 degrees, and the deformity is amenable to the treatment just described.

CASE III. Acquired double Talipes Equino-varus from Tetanoid Paraplegia; Tenotomy of each tendo-Achillis.—You will recollect the case presented at our last meeting, which comes before us now for operation. In performing tenotomy, much of its success is due to attention to detail. Two tenotomes are necessary; one sharp-pointed with which to puncture the skin, and the other probe-pointed, which is introduced through the puncture, and beneath the tendon or fascia to be divided. The parts having been rendered aseptic by cleansing with a solution of 1 : 2000 of bichloride of mercury, and put upon the stretch by flexing the foot, the puncture in the integument is made over the central portion of the tendon in such a manner that the incision in the skin and that of the deeper tissues shall not correspond after relaxation of the parts. Through this puncture the probe-pointed tenotome is introduced flatwise beneath the tendon, and as close to its deep surface as possible. The cutting edge being now turned toward it, the tendon is divided by a sawing motion of the knife. An assistant keeps the tissues upon the stretch until the operation is almost completed, but relaxes his hold before the tendon is thoroughly divided, to preclude the possibility of the instrument cutting its way through the skin. The tenotome is again turned upon its side, and withdrawn through the puncture, the operator placing his finger over its point of exit, dusting with iodoform, and sealing with a pledget of cotton saturated with compound tincture of benzoin, which forms a pellicle and prevents the entrance of air. After the operation, the foot is placed in the extension brace in order that its degree of flexion may be controlled. This possesses the great advantage over fixed plaster-of-Paris dressings of allowing frequent inspection of the parts.

I shall only mention the operations of myotomy, or division of muscles; tarsotomy, or osteotomy of the tarsal bones; tarsectomy, or the removal of a wedge-shaped piece of bone; open incision, as advocated by Phelps and Hingston, instead of subcutaneous tenotomy; and amputation as a last resort. These are so rarely performed and so little necessary, that it is only essential that you should know that such procedures have been devised.

The next case I have to show you is one of acquired talipes calcaneus.

CASE IV. Acquired single Talipes Calcaneus from Infantile Spinal Paralysis; Application of Barwell's Rubber Muscle; Improvement.—Maggie B., æt. ten, first presented for treatment in the Orthopædic Dispensary of the University of Pennsylvania. She has kindly consented to appear before you to-day. You will notice the characteristic deformity, the foot being flexed by the action of the anterior groups of muscles, the patient walking upon the heel. In this condition, no treatment does so well as the application of elastic force, advo-

cated by Barwell. The rubber supplies the place of the paralyzed gastrocnemius and soleus, and should be applied as you see in this case. To the shoe are attached two uprights with an antero-posterior joint opposite the ankle-joint. It is important that this joint should be so arranged that while it will permit flexion to any degree, it will stop extension at a right angle. The posterior rubber muscle is attached above to a band which passes around the upper part of the calf and below to the heel of the shoe. Should there be much contraction of the anterior muscles, their tendons may be divided in the manner described, before the application of the apparatus. An operation has been devised for excision of a portion of the tendo-Achillis for the radical cure of this condition, and consists in the removal of a portion of the tendon, and the stitching together of the divided ends.

The next case I have to exhibit illustrates a very important principle in treatment.

CASE V. Acquired single Talipes Equino-varus; Mechanical extension, Aponeurotomy; Recovery.—Joseph F., æt. ten years, applied to the Orthopædic Dispensary of the University Hospital for relief from a congenital talipes equino-varus with pronounced *cavus*. The case was treated by mechanical extension, as described when speaking of talipes equino-varus, and resulted in the perfect reduction of the equinus and varus. There remained, however, marked *cavus* caused by contraction of the plantar fascia. The extension-shoe was applied with the hope of relieving this condition, but without result, when aponeurotomy was resorted to. Several operations were performed, the knife being entered beneath the plantar fascia and the resisting tissues nicked, and the extent of the division was regulated by the degree of relaxation of the plantar arch resulting from each operation. As you see, the boy has made a perfect recovery.

I wish to draw your attention especially to the inefficacy of mechanical means in cases of *cavus* with marked contraction of the plantar fascia, and the reason will be readily understood if we consider the structure and function of the arch of the foot. In those forms of talipes which depend upon contraction of muscles, mechanical force applied through the tendon will act upon muscular tissue and elongate it. The plantar arch, on the contrary, is constructed with the view of supporting the weight of the body, the tissues entering into its formation are of the most unyielding character, *i. e.*, plantar fascia, and no amount of mechanical power which can be safely applied will suffice in cases in which it is markedly contracted. Aponeurotomy is necessary, and performed tentatively, nicking a little, and repeated as often as necessary, yields the best results.

The last patient to which I shall call your attention to-day illustrates a condition the opposite of *cavus*, the essential element being relaxation of the plantar tissues.

CASE VI. Acquired double Talipes Planus ("Flat-foot") from Rachitis; Plantar Springs; Improvement.—John B., æt. thirteen years. This case shows the deformity in a marked degree, the plantar arch being relaxed and flattened, the internal border of the foot resting upon the ground. These cases, in which there is much pain, have received the appellation of "inflammatory valgus." Besides rachitis, the other causes of this deformity are paralysis, ankle-joint disease, and rheumatism. It also occurs in growing children, and in those whose

occupation necessitates long standing in one position. In mild cases, the most efficient means at our disposal for its relief, are the plantar springs, which have been applied in this case, with the resulting improvement which you notice. They are made as follows:

A tempered steel spring is placed inside the shank of the shoe, moulded in such a manner as to support the relaxed tissues of the arch, and overcome the tendency of the foot to eversion. In cases of greater severity, it should be supplemented by an ankle support having a pad which will make pressure upon the internal malleolus.

All forms of club-foot may be simulated in the neuromimetic or hysterical conditions. In cases of this kind, the pedal deformity may be accompanied by contractions in other regions, or it may be the only symptom outside the general condition, and the dependence of the local trouble upon the neurotic state may be very difficult to discover. Here, as in neuromimetic affections in other regions, contractions and contractures may so counterfeit their organic prototypes as to render positive differentiation well nigh impossible. In making the diagnosis, the general condition and surroundings of the patient, the hereditary history, together with any fact as to previous mimicry or simulative tendency, should be carefully weighed. The local condition alone is not a reliable guide: the contractions are often as unyielding as in the real deformity; the muscles do not relax during sleep, and the condition may be very persistent. It is only by a careful consideration of each case, and a diagnosis by exclusion, that a correct opinion can be formed.

The care of this condition taxes the patience and ingenuity of the surgeon to the utmost. In few words, the treatment is that of the general neurotic state, coupled with the absolute avoidance of all local manipulations and mechanical contrivances suited to similar local organic deformities, and which would here direct the attention of the patient to the affected member. Despite the most careful general treatment, the deformity may persist for months, as shown by Dr. S. Weir Mitchell,¹ of this city. In this case hysterical single talipes equinus in a young lady of fifteen had continued for two years, notwithstanding the fact that treatment had removed all the more general symptoms of the hysterical state; and it was not until division of the tendo-Achillis, which I performed after consultation with Dr. Mitchell, that the deformity finally disappeared.

ORIGINAL ARTICLES.

PRELIMINARY CONTRIBUTIONS TO THE USE OF A NEW ARTIFICIAL MEMBRANA TYMPANI.²

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THERE has been considerable theorizing as to the function of the membrana tympani ever since its first

¹ Lectures on Diseases of the Nervous System, especially in Women. By S. Weir Mitchell, M.D. P. 129. Philadelphia: Lea Bros. & Co., 1885.

² Read before the Cincinnati Academy of Medicine, February 22, 1886.

description by Berengaris, an Italian anatomist, in the fifteenth century (Roosa). In the latter part of the eighteenth century, its middle fibrous layer was described as a muscular layer.

The membrana tympani is found at the bottom of the external auditory meatus, forming the boundary between the middle and external ear. It is about 9 mm. (one-third of an inch) in its greatest diameter, and consists of three layers, viz., the integumentary, or external, the mucous, or internal, and the fibrous, or middle, layers; forming altogether a structure about $\frac{1}{10}$ of an inch in thickness. A small chain of ossicles, three in number, connect the membrana tympani with the middle ear. In its healthy condition it is said to render the tympanic cavity an air-tight space. The vibration of the atmosphere, which is recognized as sound, is carried through the meatus to the membrane, whence it is transmitted by the chain of bones to the fenestra ovalis, or internal ear.

The most frequent cause of destruction of the membrana tympani is the process known as acute inflammation of the middle ear. The reason for briefly alluding to its pathology here will explain itself later on. The tympanum is an irregular space, about one-half of an inch in antero-posterior diameter, one-third to one-half of an inch in vertical, one-twelfth to one-sixth of an inch in transverse diameter. The walls of this space, as well as the ossicles, are lined by a thin delicate muco-periosteal covering, continuous with the mucous membrane of the Eustachian tube. When this membrane is the seat of irritation, it becomes thickened, there is an exudation of mucus and pus—the exudate may be pure pus; the epithelial cells are shed, softening of the tissues due to inflammation takes place, and the membrana tympani, which is the anterior wall of the tympanic space, yields to the increased pressure of the fluids in the cavity.

The membrane may present a variety of appearances. The perforation may show rough edges: there may be more than one perforation; it may be small, or the ulcerative process may sweep nearly all of the membrane away with a portion, or even the entire chain of bones. In cases where the process becomes chronic, there is hyperplasia of the mucous membrane with a formation of nodules and papillary growths. The reparative power of the membrana tympani is very great, but the continued bathing of the middle ear in pus, together with the low form of inflammation, changes the edges of the perforation so as soon to prevent a repair of membrane by granulation.

In considering the physiology of hearing and the requisites necessary for the proper function of all the structures involved, we will see that we must repair the destroyed or altered tissues before we may expect acute hearing. Schwartz states that "any changes within this space which can produce any obstruction to the free vibration of these parts must be the cause of a disturbance of hearing." The theory of the mechanism of hearing, as we find it in many textbooks, is that sound proceeding through the meatus striking the membrane causes it to vibrate. The chain of ossicles that are attached to the membrane,

and form a system of delicate levers, transmit the vibrations to the labyrinth. Helmholtz has established the theory by experiment that "the power of resonance of curved membranes is greater than those that are tightly stretched," and that this is the condition that we have in the ear. There is claimed to be two curvatures in the membrane, an inward curvature, and a curvature from the handle of the malleus toward the periphery. For perfect hearing, it is necessary that at one time the sound-waves act mostly on the circular, at another time mostly on the radiating fibres of the membrane. Politzer has proven that the chain of bones vibrate, the motions of the malleus, being twice as strong as those of the incus, and four times as strong as those of the stapes.

All of the various theories advanced are open to criticism and it can be demonstrated that they are of but little value. If the vibration of one portion is necessary to hear low sounds, and the vibration of the anterior especially to hear high sounds, how do we reconcile the fact that many patients with large perforations can hear both sounds equally well? On the other hand, if such nicety of motion is necessary between the various ossicles, why does not ankylosis of the joints which follows the different inflammatory actions of the tympanic cavity cause deafness.

That the above theories which have been pretty universally accepted are probably wrong, we shall attempt to prove: it can be demonstrated by a simple clinical experiment. If an individual be taken with perfectly acute hearing and pressure be made on the membrane and the chain of bones so as not to obstruct the sound, but prevent any possible movement of these parts, does it render the ear insensible to sound? On the contrary, hearing is as acute as ever.

It has been pretty conclusively proven that the membrana tympani is not any more essential to hearing than the eyelid is to seeing, yet both are necessary. Its function is wholly to protect the middle ear from the irritating action of the atmosphere. Artificial membranæ tympani were suggested two hundred years ago for the cure of deafness due to perforation and chronic suppuration of the middle ear. But in every instance the application was made with the view to restore the power that the membrane had on the chain of ossicles.

Bauzer was the first to propose this remedy in 1640, by inserting into the meatus a tube of elk's hoof closed at one end by a pig's bladder; but he leaves no record of his cases.

Autenrieth, in the nineteenth century, suggests practically the same thing by using a leaden tube with a fish bladder stretched over one end. Linke reports some good results from this treatment. Yearsley, of London, in 1848, was the first to write about the cure of deafness by the use of an artificial membrane which, in his case, consisted of a bit of sheep's wool curled up and placed in the meatus so as to make slight pressure against the remains of the destroyed membrane. Toynbee some years later constructed an artificial membrane out of a thin circular disk of India-rubber about one-quarter inch in diameter, fastened on the end of a thin silver wire

about the length of the meatus. Toynbee did not lose sight of *his* theory of hearing in the construction of his membrane; it was to act as a receiver of sound; he claimed that the membrane vibrated the same as the natural membrana tympani. These rubber disks often become useless after a few applications; they, in many cases, cause irritation, thereby preventing their use. The wire protruding from the meatus is another objection. In the limited number that tolerate it, there are but few who are benefited by it.

Politzer has modified this invention; he fastens a disk of rubber to the base of a human stapes, by means of thread, and places this in the niche of the fenestra ovalis, claiming for it that sound falling on the affixed stapes is conveyed to the fenestra ovalis, by the inserted stapes. Without comment, we can understand the objection to such a procedure. Hassenstein constructed a small clamp which holds a roll of wadding, this he inserts into the meatus to make pressure on the rim of the membrane remaining, or on the ossicles, and at the same time close the opening.

Hartman constructs an ingenious arrangement out of fishbone which is covered with wadding and placed against the injured membrane.

These and a few other methods have been used for the purpose of improving the hearing in chronic suppuration of the middle ear, but the results obtained have not been in proportion with the efforts that have been made. The main disturbance is undoubtedly in the middle ear and Eustachian tube, and little or no effort has been made to correct this. The suppurative condition is allowed to go on, with the artificial membrana tympani of all of the above observers placed into or over the perforation. Roosa, in his work on diseases of the ear, mentions the membrane as a valuable aid for the cure of chronic suppuration of the middle ear, but he does not explain its action. It certainly acts as an irritant, since patients are advised to wear the rubber disk only a short time each day until they become accustomed to the irritation.

I have treated a number of cases of this kind by means of a substance that will again put the tympanic cavity in its physiological condition—render it an air-tight space. As the source of the pus is the middle ear, and as it oozes out through the perforation in the membrana tympani, would it be good surgery to shut up this secretion by placing a rubber disk over it? Patients improve in hearing in proportion as we are able to restore the involved parts to their normal condition. The meaning of this I can explain no better than by reporting a few cases that I have treated.

CASE I.—A. H., aged thirty years, made application for the relief of deafness and a discharge of pus from the middle ear, which had existed for years, with the exception of a few short intervals. The patient had been treated at various times with the result of checking the discharge, but after an acute inflammation of the throat the old trouble began anew. The flow of pus was profuse. An examination revealed a perforation through the membrane, almost circular in shape, about one and one-half lines in diameter, situated in the lower anterior segment. On the left side the

perforation was considerably larger, about two inches; the mucous lining of the tympanum was very much thickened; sensitive to the touch and bled readily when handled. The hearing power was considerably reduced, patient could hear a watch tick ten inches from the ear on the right side, eight inches on the left side.

He was very impatient with the ordinary methods of treatment, since the trouble recurred sometimes after the slightest exposure. The middle ear was now daily cleansed by means of the probe and cotton, the Eustachian tube and posterior pharyngeal wall were treated by the application of yellow oxide of mercury ointment applied through the nose, and the tube and middle ear inflated by means of Politzer's air-bag.

This plan of treatment was continued for about a week, when the discharge ceased. The middle ear was also medicated by the ointment on a pledget of cotton, until the parts looked perfectly healthy. I now applied a strong solution of cocaine to the membrane and middle ear, to render them less sensitive. A circular disk of surgeon's rubber adhesive plaster, as nearly the size of the natural membrane as it could be made, was carried to the bottom of the meatus with a delicate angular forceps, so as to close the perforation, and cover the entire membrane. It was pressed in place by means of a cotton-wrapped probe, until it had become firmly adherent, thereby forming again an air-tight space of the tympanic cavity. Inflation no longer yielded the perforation whistle, but the sounds were the same as when a healthy ear is inflated. The hearing was not tested immediately after the application of the plaster.

Patient was asked to return on the following day, for the purpose of inspection. From the observation of others it seemed natural to expect a certain amount of irritation from this foreign body; but it caused no pain, nor a trace of irritation—in fact, the patient did not know, for a few days, whether the disk of plaster was still in the ear or not, except that he could not blow air through his ear, nor could he hear the puff of air when he blew his nose. So the patient continued until he was discharged, when his hearing was perfect, the membranes firmly in position as from the beginning, causing no pain, with hearing absolutely perfect, not only for the watch and conversation, but also for musical sounds of high or low pitch (patient was a musician).

Did this piece of thick sticking-plaster possess acoustic properties, as those described by Helmholtz of the natural membrana tympani, which were absolutely necessary to the proper perception of all kinds of sound? Did the chain of ossicles transmit sound more freely now than on the second day after the application of the plaster, when the hearing was found to be but little increased above what it was prior to the introduction of the little disk? Does it not seem that all speculations as to the position and curvature of the membrana tympani are erroneous?

CASE II.—The second case differed, in some respects, from the one just reported; we will, therefore, mention only these few points: Wm. S., painter, aged eighteen years, suffered from acute suppuration of middle ear when three years old, as one of the sequelæ of scarlet fever. Since then the discharge

from the ear has continued. The perforations on both sides were quite large, the middle ear was almost filled with a mass of granulations. Air could quite easily be forced through the Eustachian tubes by Valsalva's method. Hearing was reduced to contact on one side, and pressure of the watch against the head on the other side. The treatment was the same as in the first case, but the result was not so good, nor could we expect it. One month after the introduction of the adhesive disks he had improved to hearing the watch at eight inches on one side, and ten inches on the other.

CASE III.—Harry S., aged thirteen years, made application for the relief of a chronic otitis media on the right side, which had existed ever since childhood. Hearing was very much diminished, the watch could be heard at a distance of only two inches. The perforation was not large, about one line in diameter, but the low form of inflammation existing for such a length of time had caused quite a damage to the middle ear. After cessation of suppuration the hearing had improved to nine inches. This gradually increased, after the perforation had been closed by a disk, to perfect hearing. This last case was examined but yesterday, three months after the operation. The adhesive plaster is in perfect position, and the ear can be inflated without any leakage, although it has been in place three months.

Of the five cases that I can report until now, not one has been inconvenienced by the operation. Cocaine was used to render it painless. No little surprise is manifested at the statement that the disks introduced nearly five months ago are still in proper position, and are just as white and clean as at first. Compare this plan of operation with the use of the artificial membrana tympani above described and introduced as recommended. True, the patient cannot introduce this membrane himself; it is not an easy matter to carry out properly by the physician; but when once introduced it is not in the way like that of Toynbee and others; it need not be removed for cleansing, etc., but becomes, in a measure, a part of the patient himself.

The number of cases treated is small, but the results have been exceptionally good. We need not expect to restore absolutely the hearing of all cases, since irreparable damage may have been done to the ear by the disease. By this procedure I really anticipated more than I have reported; more than a closure by a foreign substance, which is tolerated against the membrana tympani with impunity, and a great improvement of hearing. I expect the closure of the perforation under the adhesive plaster, but I am not able to persuade a single one of my patients to allow me to remove a disk to see in what condition are the margins of the perforation. The improvement of hearing was not immediate, as in the cases reported by Politzer and Troeltsch, but gradual, keeping step, as it seemed, with the restoration that was going on in the middle ear, in consequence of its complete closure.

The failure to cure many cases by the use of Toynbee's membrane, or the wad of cotton, is because of the pathological condition existing in the middle ear. The natural membrane protects only the mid-

dle ear, and has nothing to do with vibration. Other things being equal, sufficient sound is carried through the membrane and tympanic cavity by means of the column of air that exists in this space.

REMARKS ON SYPHILITIC DISEASE OF THE LUNGS.¹

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BEFORE the days of Laennec, indeed from the time of Morgagni in the early part of the eighteenth century, attempts have been made to define the distinguishing features of syphilitic pulmonary processes. In describing syphilitic phthisis, writers have mostly contented themselves with stating that this disease had some influence, more or less distant, on the causes which determine phthisis.

At the present time, while abundant evidence exists relative to the inherited pulmonary syphilis of infants, one cannot affirm that the clinical features of the syphilitic impress on the adult pulmonary substance is as definite as its clinical impress upon many of the other organs and tissues of the body. There has been a paucity of necropsies in the earlier stages of possible pulmonary syphilis, and Greenfield,² in his account of five cases of pulmonary or laryngeal lesions out of twenty-two cases of visceral syphilis, says that the pulmonary changes differ but little, if at all, from those which might be produced by other chronic inflammations affecting these particular regions, and he states his belief that the evidence that the pulmonary change in his cases is due to syphilis, rests partly on the analogy with other results of syphilis elsewhere, and partly on the exclusion of other probable causes. Goodhart, from autopsies in Guy's Hospital records during twenty-two years, found 38 cases of chronic lung disease attributable to syphilis, and did not think it possible to distinguish histologically the changes due to syphilis, yet he described certain definite microscopic appearances.

In the Philadelphia Pathological Society,³ Drs. Pepper and Warder report a case of pulmonary syphilis with autopsy; but in this instance the principal lesion was gummata in the pleura and lung, associated with other pulmonary lesions which were probably secondary. Recently the number of reported cases of pulmonary syphilis have increased. Paucritius,⁴ of Berlin, reports over 110 cases of various forms of syphilitic affections of the pulmonary system, but is impressed with the frequency of an interstitial pneumonia or induration of the connective tissues following the track of the bronchial and pulmonary arteries for a certain distance from the hilus of the organ into its interior.

Reginald Thompson⁵ reports over sixty well-marked cases with peculiar physical signs distinguishing the

¹ Read before the Philadelphia County Medical Society, January 20, 1886.

² London Path. Soc. Trans., vol. 28.

³ Transactions for 1877 and 1878.

⁴ Lungen-Syphilis, Berlin, 1881, p. 295; British Med. Journal, Feb. 4, 1882.

⁵ British Med. Journal, Feb. 10, 1877, and Aug. 28, 1880.

disease; and which were relieved by antisymphilitic remedies. Frederick Robinson,¹ Gamberini,² Schnitzler, Rollet,³ and Fournier, have also defined certain lesions with special symptoms as due to syphilis. And again Robinson describes two forms of pulmonary syphilis, one in which the greater part of the organ was involved, with the disease appearing primarily at the base extending through the entire lung, posteriorly as well as anteriorly to the apex, and another in which the disease was limited to one or both apices. He adds that the patient in both cases had passed through the stage of secondary syphilis, and the constitution was left free from any outward manifestation of disease, and regarded the first-named condition as "exhibiting little if any difference between it and ordinary pneumonia." He based his differentiation of the syphilitic condition upon the more extensive involvement of the lung in syphilis, and also that the premonitory symptoms local and general were less apparent. Further, in specific pulmonary processes he thought that there was "little if any pyrexia, dyspnoea only in exertion, little or no sputa, and ultimately recovery takes place."

The literature of this subject also includes Mo-hamed's case of early fibroid syphilitic disease of the lungs, but he also considered the specific character of this growth entirely an open question; and Pye Smith, in reporting a possible case of syphilitic pulmonary disease, writes: "between this syphilis pulmonum and chronic interstitial pneumonia, there is, I admit, no anatomical difference." He bases his distinctive criteria upon the associated changes in the other viscera, and on the reaction to treatment. Green⁴ says that the specific fibroid processes differ but little, if at all, from those met with in chronic fibroid phthisis, in chronic pneumonia, and certain forms of pulmonary induration. He urges, however, as distinctive the origin of the growth from the nutritive or bronchial arteries, rather than from the peribronchial or peribulbar tissues. He adds, that the changes in the inner coat of the small arteries of the brain in visceral syphilis described by Huebner and Greenfield, have not been shown to occur in pulmonary vessels.

A more recent contribution to this subject is by Porter,⁵ of New York, before the New York Post-Graduate Clinical Society, based on 100 cases of pulmonary disease with a positive syphilitic impress, and selected from 1000 cases treated at his clinic. Of the remaining 900, many had pulmonary lesions, and diseases of the various organs, which, in his opinion, were of syphilitic origin, and which, as a rule, responded to a certain line of treatment. In the discussion which followed the presentation of the paper, the experience and opinion of Sturgis and others showed that specific pulmonary processes were less common, considering the great number of adults who had syphilis.

Finally, the writer's observation of pulmonary disease as occurring in the Philadelphia Hospital, covering a period of ten years, has led him to form an

opinion that syphilitic processes, excepting in the form of gummata, are infrequent in the lungs. Phthisis in its various forms, however, he has noticed as quite common in syphilitic subjects, arising in the ordinary etiological relation, the deterioration of the general health of syphilitic subjects possibly acting as a predisposing cause; and since the process is oftenest sub-acute or chronic in these subjects, the symptoms indicate fibroid change as a principal lesion, although in some cases rapid disintegration of the lung ensues. He has, however, notes of a number of cases of gummata in the lung, the pleura, and from the periosteum of the ribs or sternum; but in these cases any distinctive specific features in the associated pathological appearances were wanting to distinguish from the ordinary lesions of catarrhal or tubercular phthisis.

Diagnosis of Pulmonary Syphilis.—I have selected the case of the patient who is now presented, because his history represents a fair example of the clinical features which may be ascribed to pulmonary syphilis.

John C., aged thirty, of healthy parentage, with no inherited tendencies to pulmonary disease, came into the Philadelphia Hospital in February, 1885, with secondary syphilis and characteristic eruption. Within two months of his admission physical examination revealed the signs of consolidation of the apex of the right lung, followed shortly by unequivocal signs of consolidation of the whole upper lobe. In May, general periosteal symptoms developed with inflammation of the ankle-joint. Preceding the development of symptoms of pulmonary consolidation, marked laryngitis with bronchial catarrh existed. The temperature ranged from 100° to 103° for nearly six weeks. At date the physical signs of implication of the upper lobe of the right lung persist, although the process is stationary. There is marked evidence of periosteal thickening and tenderness of the clavicular, tibial, and sternal periosteum. No bacilli have ever been found in the sputa.

In commenting upon the diagnosis of this case, it is evident that it cannot rest upon the physical signs by auscultation or percussion, for these are certainly never characteristic, but the diagnosis in this, as in most cases, must be inferential from the rational history, the periosteal tenderness, and perhaps the absence of bacilli from the sputa.

Pulmonary syphilis is said to develop usually within two to five years from the date of infection, or as late as ten or more years. In the above case the lung implication was much earlier, *pari passu*, with the evolution of the symptoms of secondary syphilis.

The attack of laryngitis during the initial stages is an important symptom, according to most authorities. Yet, as showing the diversity of opinion, Schnitzler lays particular stress on the relation of pulmonary syphilis to specific affections of the larynx, on the simultaneous appearance of the lesions, and the confirmation of syphilis of the lung through coexistent disease of the larynx. On the other hand, in only one of Goodhart's thirty-eight cases, already cited, was the larynx noted to be diseased, and the intestine in only three; while the same author observes that out of 100 post-mortem examinations in ordinary phthisis the larynx has been affected in 24 per cent., and the intestine in 46 per cent.

¹ Lancet, London, May 5, 1877.

² British Med. Journal, Jan. 1, 1881.

³ Wiener med. Presse, Oct. 1879.

⁴ London Pathological Society, vol. 28.

⁵ Op. cit.

⁶ New York Medical Journal, August, 1885.

Most authorities lay stress upon the presence of external evidences of syphilis in cases of specific pulmonary disease, yet Mr. Hutchinson has advanced the opinion that visceral and tertiary changes are in inverse ratio to secondary visceral symptoms.

Finally, the distribution of the lesion in the case presented may be considered as tallying with the observations of very many clinicians, but after careful examination of the literature of this subject I would affirm that no satisfactory diagnostic clinical deductions can be made from the location of the lesion, since professional opinion is so widely diverse. Taking Porter's recent paper, in his opinion the apices, on one or both sides, would be the most usual seat of implication, while Goodhart and Green describe the process as affecting the bases of both, or the roots of the lungs, the new growth springing from the bronchial or interlobular bloodvessels, and they state that the vascularity, and the fact that it does not originate in the alveolar or bronchial wall, are the most valuable evidence we possess of the syphilitic nature of the fibroid induration. Again, if the pulmonary lesions are introduced by an attack of pleurisy, the process in the lungs is usually located at one or both bases.¹

It is claimed by many writers that specific pulmonary lesions disappear under antisymphilitic treatment, but it should be remembered that mercury and iodide of potassium have the property of causing absorption of infiltrations from whatever cause. And, further, whatever may be the results of treatment, if the process be gummatous the clinical results in effecting the resolution and reabsorption of connective tissue hyperplasia are, to say the least, not encouraging.

To give an example of the sort of case which is often considered an example of late pulmonary involvement ten or twelve years after infection, I have selected from my note-book the following history:

A gentleman in 1872 contracted syphilis. He had secondary symptoms, mucous patches in the mouth, alopecia, periosteal pains, etc. These recurred at intervals for a year or two, and then ceased entirely. In the spring of 1883 he began to have lightning pains in the legs, and shortly afterward discovered an absence of patellar tendon reflex. During the summer, ptosis of right eye occurred with enlargement of the pupil, and his general health was much impaired. In May, 1884, although of perfectly healthy stock, with no hereditary predisposition to lung trouble, he contracted an acute laryngitis, which was persistent, and soon followed by general bronchitis. In July, of the same year, slight dulness appeared at right apex with râles at same point, and a few râles, also, at the left apex. The temperature was never high, 100° to $100\frac{1}{2}^{\circ}$, a few times 101° , with moderate night-sweats. In September, 1884, went to Colorado, and since then all the physical signs have improved, including cough, fever, etc., and the only evidence persisting at date is a slight depression above the clavicle. During the entire course of this history he took iodide in as large doses as the stomach would bear, with occasional use of mercury. At

this date he suffers from lightning pains in legs; but there is now a slight response to the patellar tendon, and sometimes a severe nocturnal headache. No bacillus ever discovered in the sputa.

Comments.—This case inferentially might be classed as representing visceral syphilis, and the pulmonary symptoms some part of the general invasion, yet surely the diagnosis could not be regarded as positive.

Dr. John Guit  ras, of the Marine-Hospital Service, has sent me a description of certain cases which he had seen at Key West, which he has thought might be considered as indicating specific pulmonary trouble. There were five such cases; all males, three colored, two white. In four of them the left base was implicated, in one the right. The youngest was twenty-five years of age, and the oldest fifty-two years. The history of the first case, which is given in synopsis, is representative of the others.

CASE I.—A powerful young mulatto, about twenty-five years of age, complained of suffering for two months with more or less constant, often severe, pain in the left side, and a dry cough, very harassing except when it brought blood. He frequently expectorated blood for three or four days in succession, and then no h  moptysis would occur for a week or more. The amount of blood expectorated never exceeded (in one day) two ounces, seldom more than one ounce. The blood was sometimes, during the same day, bright red, mixed with mucus; sometimes dark and lumpy. The emaciation had been rapid. The expansion of the lungs was good when the pain was not great. There was an area of slight impairment of resonance on the left side, not extending higher than the seventh rib, but of indefinite outline, and quite difficult to detect. On auscultation there was feeble respiratory murmur, and crepitation higher than would be expected even on the days when h  moptysis occurred. The crepitation was most distinct, and often limited to inspiration. Sometimes the crepitation was modified by the cough, and seemed to occur in patches, indicating a pleural etiology for the râles. The physical signs suggested localized pleurisy, with small areas of some variety of infiltration of the underlying pulmonary tissue. He was given small doses of iodide of potassium and ergot; but the marked improvement within two weeks suggested an increased dose of the iodide of potassium, and recovery ensued in a little over two months.

The first marked symptoms were, in all cases, pain and hemorrhage, hacking cough, loss of appetite, and feverishness, though the temperature never rose above 101° . In the first day or two after the days on which hemorrhage occurred the evening temperature was 100° – $100\frac{1}{2}^{\circ}$, with normal morning temperature. In the days of interval between the hemorrhage the temperature was normal. H  moptysis before treatment was frequent, patients seldom passing a week without hemorrhage, which might last from one to ten days.

Periods of time, varying from one year to four years, had occurred in all five cases between the manifestation of the lung trouble and the last secondary manifestations. All cases were characterized by an  mia, and all recovered completely and rapidly under treatment, as mentioned, so far as the

¹ Ferguson: Some Points in the Relation of Syphilis to Pulmonary Diseases, THE MEDICAL NEWS, Jan. 17, 1885.

lung trouble was concerned, but previous to treatment the progress of the cases seemed rapid.

Two of the cases subsequently were submitted to specific treatment, for tertiary bone trouble. In each of the cases the friends of the patients had considered them consumptives.

In conclusion, let me present a brief summary of the symptomatology which has been attributed by the various authorities already mentioned to the clinical picture of syphilitic pulmonary disease.

Symptoms.—The subjective symptoms are numerous, but are often preceded by catarrhal processes in the larynx and bronchial mucous membrane. They are followed by a sense of discomfort, oppression, and uneasiness at the root of the neck, which may increase till actual pain is felt, usually located in the back between the scapulæ, but sometimes radiating through the intercostal nerves around the chest. There may also be difficult respiration, with more or less dyspnoea, especially in the mornings and evenings, besides a sense of heaviness and oppression in the chest, with a feeling of inability to inflate the lungs. These symptoms may be increased on exertion, respiration becoming wheezing, with imperfectly developed asthmatic attacks. Hoarseness, with varying degrees of aphonia, more or less dysphasia, or unequal pupils may be present. In what may be termed the prephysical sign stage, cough may be an initial symptom. It is dry and paroxysmal, with more or less dyspnoea; and, perhaps, like some of the other subjective symptoms, might be attributed to pneumogastric irritation. Rheumatic and nervous symptoms, including sleeplessness and deterioration of the blood-crisis, may testify to the syphilitic infection of the blood.

Objectively, the chest is reported as better developed in the specific form of pulmonary phthisis than in the various analogous forms of pulmonary lesion. The patient may have the appearance of full health. Moxon relates the case of a man employed in carrying sacks of grain, and who was suddenly killed. It was found that he had fibroid induration of a great part of the right and left lungs, besides scars in the liver and testes. When the disease has advanced the ordinary cachectic appearances of phthisis are developed; but the process peculiar to syphilis is, in such cases, long past.

Physical Signs.—The only physical signs, which seem of especial value, are the periosteal thickening of one or both clavicles, subternal tenderness, and œdema, thickening of the tibial periosteum; possibly, also, the absence of bacilli might be included as of importance. The percussion evidences of enlargement of the bronchial glands may be decided. The respiratory murmur may be feeble in volume, and limited to inspiration, especially over the interscapular region.

In one or the other bronchus the respiratory murmur may be more highly pitched than in health, and slightly exaggerated on one side, or at the base of the chest, according to the location of the specific process. The respiratory rhythm is often jerky and

paroxysmal. A peculiar alveolar rustle, resembling the sound produced by the rumpling of wall-paper, has been alluded to by Reginald Thompson as characteristic. The absence of râles is commented on by many authorities, and by Porter is explained by the dilated and moist condition of the smaller bronchi; he holds that bronchial râles are produced by the separation of the walls of the finer divisions of the bronchi. Hæmoptysis is infrequent, but is possible through the rupture of newly developed bloodvessels in the new formation in the lung or hemorrhagic infarction of newly developed bloodvessels. The temperature seldom rises much above normal. Inspection and palpation may reveal only a well-developed chest, or the displacements of the viscera common to fibroid forms of phthisis.

All these signs very carefully recited by well-recognized authorities demand attention, but it seems very difficult to assign to them a high degree of value. Certainly these, as well as additional physical signs in specific pulmonary processes unassociated with gumata, must be shared by other forms of fibroid phthisis. When cavities occur, the physical signs cannot be significant.

The specially diagnostic features have already been indicated as including the rational history, the periosteal tenderness, the evidences of the fibroid character of the growth, including dyspnoea, and usually, but not invariably, a low thermometrical record. Perhaps also the absence of bacilli from the sputa, and the dry character of the cough, with recurrent and frequent hæmoptysis.

Summary of Pathological Changes.—1. It may be doubted whether syphilitic pulmonary processes should be entitled syphilitic phthisis because, as Pye Smith observes, that phrase reduces a capital distinction in etiology, prognosis, and treatment; but it would appear that there is a form of pulmonary consolidation which is principally a chronic interstitial hyperplasia, which, by many competent observers, has been etiologically associated with syphilis. "In the case of tubercle the cells are heaped together, and rapidly undergo degeneration apparently from mutual compression and destruction. In syphilis the cells are more distinctly separate, and the mechanism of degeneration appears to be entirely distinct. Mingled with the sound cells, other cells of fusiform or irregular shape soon appear, and these, in their growth, are transformed into a very complete tissue, much resembling granulation tissue or sarcoma. This growth is highly *vascular*, the cells are frequently of large size, the protoplasm abundant, and the nucleus and nucleolus distinct. Indeed, the growth seems to be in a process of very complete organization. But at this point a change seems to occur, sometimes suddenly. The tissue remains apparently the same, but its vitality is evidently lost, the outline of the growth and the vessels can be seen, but they do not stain with carmine or logwood, and they become of a dead-white color."¹ The vesicles are described as being filled with "red blood-disks, leucocytes, desquamated epithelium, and fibrillated fibrin, identical with that found in the second stage of a lobar pneumonia. Others are filled with de-

¹ Porter "has observed that when the sternum is excessively sensitive the tibial crests are less so, and *vice versa*." See also Levin: *THE MEDICAL NEWS*, Aug. 15, 1885.

¹ Greenfield, *op. cit*

colored round cells, or with round, distinctly nucleated epithelium cells, of a diameter varying from one-fifteen-hundredth to one-two-thousandth, others contained granular degenerating material, which would not stain."¹ In other words, a degenerative catarrhal pneumonia. Cheesy masses occurring in the lungs appear as encapsuled masses rather than as diffused centres of softening. Enlargement and pigmentation of the bronchial glands, associated with evidences of bronchitis with peribronchial thickening, and, possibly, narrowing of the bronchial passages, as compared with non-syphilitic forms of similar lesions, in which the bronchial tubes are more widely dilated. Cases have been reported of nodules of syphilitic new formations in the superior and inferior extremities of the trachea and larger bronchi. The nodules may ulcerate, and, in healing, form cicatricial bands of fibrous tissue, which cause contraction of the tracheal tube transversely, or diminish its length.

The indurative hyperplasia, according to Green and Goodhart, commences around the small interlobular bloodvessels, and not in the alveolar and bronchial walls. The fibrosis is attended with puckering of the pleura, and is less evenly spread over the lobe than in chronic pneumonia, is nodular rather than diffused. It differs from miner's phthisis in wanting the extreme dilatation of the bronchial tubes, and possessing greater solidity from greater cell-growth. Pleural inflammations are also mentioned, especially thickening. It is evident to the writer, from his experience, that much is yet to be learned on this important subject before a definite conclusion can be formulated; and the final adjustment of the relation of the bacillus tuberculosis to the etiology of pulmonary tuberculosis must be awaited.

2. There is no doubt that gummatous formations in large or small nodules are sometimes developed in the lungs or the pleural tissues, or the periosteum of the thoracic bones.

3. The usual forms of pulmonary phthisis apparently developing in consequence of impaired general health, induced by syphilis, is quite frequent.

4. Pulmonary lesions of a syphilitic character in the foetus, or in syphilitic infants, are unquestionable.

Prognosis. Treatment.—The testimony of many competent observers seems to point to successful treatment when the usual drugs, viz., mercury and iodide of potassium, in large doses, are administered. The prognosis, it would seem, depends upon an early recognition of the trouble. The ravages of the specific process, however, often produce such loss of substance in the lung that the lesions are irreparable; and, therefore, we cannot always accomplish the brilliant results which usually attend an antisiphilitic treatment when the other viscera are invaded.

ON SPONTANEOUS PHLEBACTERIEKTASIA OF THE FOOT.²

BY A. G. GERSTER, M.D.,
OF NEW YORK.

DURING the past year two cases of this rare and interesting morbid condition came under my ob-

servation in the German Hospital. Both patients were boys—one fourteen, the other eighteen years old—and in both cases the beginnings of the disturbance belonged to infancy. The older one declined operative treatment, and withdrew from observation. The history of the patient presented is as follows:

Robert Klaile, æt. fourteen, a well-developed boy, was admitted to the German Hospital, July 2, 1885, on account of a number of rebellious ulcers situated on the dorsum of the left foot. The condition was said to have existed since childhood; no injury was remembered. Physical examination of the internal organs revealed their normal state, with the exception of the heart, which was found to be enlarged, and evidenced a marked increase of the energy of its pulsations. The femoral arteries of both sides were found to beat with unusual strength, and, when somewhat compressed, gave rise to a strong whirr, both to be felt and heard by the stethoscope. On inspection, an increased size of the left foot became manifest, the hypertrophy pertaining to the soft parts as well as to the bones. The length of the right foot was 24 centimetres, that of the left foot 25 centimetres. Their circumference was 23 and 24 centimetres. The dorsum, as well as the sole of the left foot was occupied by a doughy, soft, nodular swelling of irregular and not well-defined outlines. The skin of the plantar surface was normal; but on the dorsum, along the course of the saphenous nerve, a series of roundish, irregular, rather hard, dark blue, partly confluent nodes could be seen. They were partly covered with a thick layer of rough epidermic scales, partly by a closely adherent dry scab. Attempts at removing this were followed by rather copious capillary hemorrhage. Their general aspect was that of teleangiectatic nodes. A number of enlarged veins surrounded these nodes, and could be plainly seen through the skin. If pressure was exerted on the swellings, they could be made to disappear, or at least diminish in size, and also a deep-seated pulsation of the whole mass became at once evident. Compression of the femoral artery promptly suppressed the pulsation, and while the compression of the main trunk lasted the swelling did not resume its former size. On the other hand, if the artery was compressed while the tumors were turgid, pulsation ceased, but there was no appreciable decrease of the size of the swelling to be observed. The stethoscope gave evidence of a strong arterial bruit all over the swellings. There was a marked difference in the temperature in favor of the left foot.

It seemed clear that we had to deal with a mixed angioma, containing the elements of both a cirroid aneurism and of teleangiectasia with phlebeaktasia. As there was no history of a gross lesion of the bloodvessels, a chronic inflammatory alteration of the entire vascular apparatus of the foot had to be assumed, which by this time had also reacted upon the femoral arteries and the heart, inasmuch as they too were found to be hypertrophied.

An ablation of the diseased part was proposed, but declined; wherefore having explained the not inconsiderable danger of a deligation of the main artery, and having vainly tried elastic compression

¹ Porter, New York Medical Journal, August, 1885.

² Read before the New York Surgical Society, March 8, 1886.

for a considerable time, the patient was anaesthetized on July 7th, and the superficial femoral artery was tied in Scarpa's triangle. Pulsation ceased for a time, but became faintly but clearly noticeable about ten minutes after closure of the vessel; whereupon the external iliac artery was exposed and tied. Pulsation did not return after this. The wounds were closed, not drained, and the limb was enveloped in a thick swathing of cotton batting.

The course of the healing of the wounds was undisturbed and feverless, but the circulation in the limb became so depressed that serious apprehensions were entertained in regard to its preservation. The toes, especially the first and second, were cold and livid, their sensibility was destroyed, and in the course of the first week necrosis of the integument of the terminal phalanges became manifest. At the same time the skin on the outer and posterior aspect of the limb, exactly over the course of the peroneal muscles, sloughed; and on being removed, necrosis of the entire belly of the peroneus longus was ascertained. A fortnight after the operation, the muscle was removed. It had the aspect of a pale, waxy, translucent substance. There was hardly any sup-puration, and it was deemed advisable not to leave the sequestration of such a large mass of tissue to the rather uncertain and risky efforts of nature. The toes were also removed. The patient was discharged cured in October, and no pulsation or increase of the tumors were noted at the time. The size of the swellings was somewhat smaller than before the deligation, but there was no hardening or marked shrinking such as would follow obliteration; on the contrary, the dough-like consistency had remained unaltered.

Patient was readmitted to the hospital in Jan. 1886. Pulsation had returned and was just as evident as before the operation. The teleangiectatic spots were all supplanted by ill-conditioned ulcers. The metatarso-phalangeal joint of the great toe was open and suppurating, and the boy complained of much pain and discomfort due to the ulcers.

Pirogoff's amputation was done Jan. 29, 1886, with the aid of Esmarch's band: the sections of an unusual number of large vessels, twenty-seven, were taken up and tied before; eleven more ligatures were applied after the removal of the constriction. The segment of the calcaneum was nailed to the tibia, and the wound closed by an interrupted catgut suture. Drainage was effected through a counter-opening made alongside of the tendo-Achillis. The first dressing was removed twenty-one days after the operation, and the wound was found firmly united, except along a small portion of the suture, where the rather fine catgut had been absorbed too soon. This narrow strip of granulation, together with the track of the nail, was found cicatrized over five days later, when the second dressing was changed.

The patient has a good stump, and walks on it without support.

A very excellent anatomical study of a case of considerable magnitude, by W. Krause, will be found in the second volume of Langenbeck's *Archiv*, published in 1862. Nicoladoni has also reported three cases: two in vol. 18, pp. 252 and 711; the third

one in vol. 20, p. 146, of the same periodical. All, with the exception of one reported by Nicoladoni, were affections of the upper extremity, which is said to be the favorite site of the disorder. Both cases seen by me involved the foot; one the left, the other the right. I may add, that the other case presented, especially as regards the local appearance and situation of the malady, an almost identical state of affairs as the case before you, only of less development.

As regards the treatment, the case presented bears out the experience of others, inasmuch as it demonstrates the futility, in the more extensive cases, of less radical measures than ablation.

MEDICAL PROGRESS.

COMBINATION OF IODOFORM AND NITRATE OF SILVER AS A CAUSTIC.—MALTHER speaks highly of the following caustic and alterant treatment in torpid chronic ulcers and fistulae. The surface in question is sprinkled with iodoform, then the lunar caustic is applied thoroughly, and finally the sprinkling with iodoform is repeated. A slight effervescence is produced with evolution of nitrous acid, iodine, iodide of silver, and perhaps also nitric acid and other combinations, all of which bodies act in their nascent state upon the tissues. The ulcers heal with comparative rapidity, and are protected by an antiseptic layer of iodoform and iodide of silver.—*Journal de Médecine*, February 21, 1886.

EFFICIENCY OF COMMERCIAL PEPSIN AND PAPAIN.—DR. WILLIAM MURRELL records the careful examination of the digestive power of thirteen specimens of commercial pepsin, some of English, others of French, German, or American manufacture. They were all active, but in many the proteolytic power was very small. Only four came up to the standard of the new British Pharmacopœia. The name is evidently no guarantee of purity, for a specimen made by a well-known firm was represented by the figure 871, whilst another, sold under an equally well-known name, had to be satisfied with an award of 162, a state of affairs which is hardly satisfactory. The same pepsin is often sold under different names, according to the amount of impurity added. I have before me a table showing the exact quantity dissolved by one grain of all the best-known pepsins, but I do not think it would serve any useful purpose to publish it. Better by far that every medical man should make his own observations and form his own opinion. It may be doubted if the Pharmacopœial description of pepsin as "a light yellowish-brown powder" is a happy one, for the most active specimen was a preparation in scales. The pepsin usually supplied to hospitals is, I am sorry to say, of poor quality. In addition to the thirteen solid pepsins, I examined six liquid preparations, wines, essences, etc., and although ten grains were taken instead of one, the results were unsatisfactory, and the only conclusion I could arrive at was that they were not very reliable, although none of them were absolutely inactive. Having used the carica papaya largely in the treatment of various forms of dyspepsia, I determined to try it against the best pepsins, but found that under the conditions already indicated it was decidedly inferior in activity. I examined

in all six specimens of papaw obtained from trustworthy sources, but only two came up to the Pharmacopœia test. The best papain had about half the activity of the best pepsin. I do not say that in alkaline or neutral media the papains are not more active, but simply that, tested against the best pepsins and by the same methods, they do not give equally good results. Even in a neutral solution the best papain was not equal to the best pepsin in an acid solution. A papaw preparation which in a certain time dissolved 420 grains in an acid solution dissolved 476 grains in a one-fourth per cent. carbonate of soda solution and 535 grains in a neutral solution.

No one can doubt that pepsin is a valuable therapeutic agent, and that it is of the greatest possible use in the treatment of many forms of atonic dyspepsia, flatulence, and gastralgia; but to obtain anything like good results it must be given in doses very much larger than those recommended in the British Pharmacopœia. To give only from two to five grains at a time is a palpable absurdity. The reason that such good results are obtained with pepsin in the treatment of infantile diarrhœa is that it is given in proportionately larger doses. To obtain good results in the treatment of dyspepsia two things are essential—first to test your pepsin, and then to give plenty of it.—*Lancet*, Feb. 27, 1886.

THERAPEUTICS OF GONORRHOEA.—AWSSITIDJISKI, as a result of the observation of forty cases of gonorrhœa, recommends the following treatment. During from three to four days ninety grains of salicylate of sodium in six fluidounces of infusion of flaxseed are given daily, together with warm sitz-baths. As soon as the cutting sensation on the urethra has disappeared injections of a two per cent. solution of boric acid are given from four to six times daily for four days. Finally injections of mercuric bichloride, one part in six thousand, are ordered, and continued until the cure is complete.—*Centralbl. f. Chirurgie*, Jan. 30, 1886.

INDUCED EPISTAXIS IN HEADACHE.—According to COIFFIER, in congestive headache nothing secures relief so quickly as induced epistaxis. To produce free nose bleed, proceed as follows: Cut a little piece of mustard paper, dip it in water, roll it up mustard side outward, and introduce it for a few moments into the nostrils. Slight local abrasion will then readily induce the requisite bleeding.—*Canadian Practitioner*, March, 1886.

PRECOCIOUS MENSTRUATION.—WALLENTIN records the rare anomaly of a female infant in whom menstruation began in the fifteenth month, and has continued to her seventh year, up to the date of the present paper. The elimination of blood has occurred every four weeks, and endures from three to four days. At the age of four years it weighed over fifty pounds, breasts well developed, mammillæ prominent and pigmented, mons veneris somewhat hairy. At six and one-half years there was apparently mature sexual and physical development. The mental development, however, corresponds to the age of the child.

Wallentin maintains that the bleeding is distinctly menstrual, basing the assertion upon the absence of any pathological cause, and upon a case recorded by

Prochownik (*Arch. f. Gynäk.*, Bd. xvii.), in which, at the autopsy of a three year old infant who had menstruated for two years, there was discovered not only marked development of the ovaries, but a fresh corpus luteum.—*Centralbl. f. Gynäk.*, February 20, 1886.

REMOVAL OF BOTH OVARIES DURING PREGNANCY.—At the annual meeting of the Obstetrical Society of London, on February 3, 1886, MR. KNOWSLEY THORNTON presented the following unique case. M. W., married, aged twenty-two, in the third month of pregnancy, was known to be large twelve months before marriage. She is now beyond the size of pregnancy, and has a large fluctuant tumor in the abdomen, which is growing fast. Has suffered from several attacks of pain in the abdomen, with rise of temperature, sickness, and faintness. Diagnosis: ovarian tumor complicated by pregnancy. Ovariectomy advised, and performed Feb. 4, 1885. Dermoid tumors of both ovaries removed. Rapid and uninterrupted recovery. Premature delivery at eighth month. Labor uncomplicated. Lochia normal. Fine healthy child, and plenty of milk to nurse it. On examination, uterus found atrophic; patient, while nursing, suffering from flushes, chills, etc., just as others do who have an artificial menopause brought on by operation.—*Lancet*, Feb. 20, 1886.

MIXTURE FOR THE ANOREXIA OF PREGNANCY.—FORWOOD recommends the use of the following mixture in cases of loss of appetite in pregnant women:

Pulverized calumba root,	
Pulverized sugar root	aa 15 parts.
Senna leaves	4 "
Boiling water	475 "

Infuse. A wineglassful before each meal.—*L'Union Médicale*, Feb. 27, 1886.

THERAPEUTIC NOTES.—DR. YEO, of King's College Hospital, in his opening lecture in the course of clinical therapeutics, is reported by *The Lancet* as having made the following practical observations:

1. That in order to derive the full beneficial effect from iodide of potassium in cases of aneurism, the drug must be given in twenty or thirty grain doses three times a day.
2. That arsenic, besides acting well in chronic skin affections, is often of service in cases of angina pectoris, asthma, neuralgias (especially the visceral forms), and in some kinds of anæmia.
3. That aconite is much more certain in its action when given to reduce the temperature and other symptoms of local inflammations in children than it is in the case of adults.
4. That the topical application of opium is a much neglected but useful remedy for the relief of local inflammations, especially when these are traumatic.

POWDER FOR USE IN PYROSIS.—MONIN records favorable results from the exhibition of the following powder in cases of heartburn:

Pulverized phosphate of zinc	10 parts.
Calcined magnesia	3 "
Pulverized vanilla	1 part.—Mix.

A teaspoonful in a wineglassful of water.—*L'Union Médicale*, Feb. 16, 1886.

THE MEDICAL NEWS.

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SATURDAY, MARCH 20, 1886.

THE DEATH OF DR. FLINT.

By the death of AUSTIN FLINT, SR., the profession of this country has lost a distinguished representative and a most honored member.

When we hear of the death of a man advanced in life, the shock of the announcement is dulled by the feeling that his work was finished and the inevitable had come, but with Dr. Flint it is far otherwise. We have here the keen sense of the removal of a man in the vigor of his intellectual and bodily powers; of the loss of a veteran, it is true, but of a veteran in full armor, still marching as a leader in the very van of progress. This it is which makes his death untimely and his loss a calamity.

In his ties of birth, education, and work Dr. Flint was singularly fortunate. Born in Massachusetts and educated at Harvard, he enjoyed, as a young man, the best advantages the country afforded, and grew up under influences which fostered in his character the firmness, energy, and determination which he inherited from an old Puritan stock. How much of his professional success in life is to be attributed to good qualities derived from his ancestors is an interesting question, as he is one—perhaps the most notable—of a long list of New England physicians in whose families the practice of the healing art has descended, as a sacred office, from father to son through several generations. Among the circumstances which combined to make Dr. Flint a representative American physician, we must take into account the extent and diversity of his field of labor in the first half of his career. East, West, North, and South may justly lay claim to a share in his professional development, and to the influence upon him of life in Buffalo, Chicago, Louis-

ville, and New Orleans may be attributed in part, at least, his intense devotion to what he deemed the best interests of the profession throughout the country.

It is not our purpose on this occasion to estimate the value of Dr. Flint's work, but we may indicate the two directions in which, as it seems to us, he has influenced the medical thought of his day. No one in this country has contributed so much to our knowledge of the physical signs in pulmonary and cardiac disease, and his labors here will have an abiding interest; and as his early and most important contributions were to these subjects, so the last paper from his pen, in the January number of *The American Journal of the Medical Sciences*, deals with questions which he had made the study of a life. To his teaching during half a century we may attribute the prevalence of more rational ideas upon the nature of disease and the action of medicines. Doubtless it was from his great master, Jacob Bigelow, that he learned the lesson which he illustrated in so many ways in his works on fever and on phthisis, that a knowledge of the natural history of a disease formed the starting-point for its rational therapeutics.

But in a still better way the life which has thus prematurely closed has had an influence widespread, beneficial, and enduring. Not for a moment, in his long career, did Dr. Flint lose sight of the dignity and honor of his high calling. It was his life; in it he may be said to have lived and moved and had his being; in it few have walked more worthily; and in the universal esteem of the profession in this country and abroad, he had a reward dearer to him, doubtless, than the measure of worldly success which fell to his lot.

LORETA'S OPERATION.

IN THE MEDICAL NEWS for April 21, 1883, there appeared the first account of the "digital divulsion of the pylorus," as performed by PROFESSOR PIETRO LORETA, of Bologna, Italy, presented in the English language. A record of the first two operations was read in Bologna before the Academy of Science, by the originator of the method, on February 11th of that year, and the same, in printed form, was sent, with photographs of the two cases, to Dr. Robert P. Harris, of Philadelphia, on March 19, 1883, by Dr. Peruzzi, of Lugo, who now resides in Bologna, and has assisted the Professor in a number of his operations. This monograph, with the illustrations, and a photograph of the operator, may be seen in No. 702, F. B., College of Physicians, Philadelphia, Library.

Finding his method quite successful in overcoming non-malignant stenosis of the pylorus, Prof. Loreta turned his attention to the same condition of the

cardiac orifice, and upon July 9, 1883, not quite ten months after his first essay upon the former, opened the latter by his method of "*rapid divulsion of the cardia*," a long-handled instrument having been contrived for the purpose, because of the impossibility from its location of acting upon this orifice directly by the fingers, as had been done by them with the pylorus.

In a letter from Bologna, dated February 22, 1886, Dr. Harris received from Dr. Peruzzi an authoritative statement of the operations of both varieties, which have been performed by Prof. Loreta during the last three years. This record differs somewhat from that of Ancona, in the *Archives G n rales de M decine*, of Paris, Sept. 1885, pp. 318-334; and of Winslow, in the *American Journal of the Medical Sciences* for April, 1885.

Digital divulsion of the pylorus was first performed, as already stated, on September 14, 1882, at Bologna, since which time its originator has operated eight times, the ninth performance dating November 30, 1885. Of the nine patients, five were cured and four died. Three were lost from the shock of the operation, it having been too great for them to endure in their enfeebled state, produced by imperfect nutrition and repeated attacks of vomiting; and one from hemorrhage.

Rapid instrumental divulsion of the cardia has been performed, in all, by the same operator, seven times, the last on March 21, 1885. Of the seven patients, four were cured, two improved, and one died (from shock). One of the cured was operated upon by both methods, as the pylorus and cardia were both affected with stenosis. A photograph of one of the cases in the possession of Dr. Harris is that of a young girl, apparently of the better class, in whom a long vertical cicatrix shows that her abdomen was opened in the linea alba, and not obliquely on the left side. This is now the line of incision adopted by Loreta in operating upon either orifice of the stomach, as by it he avoids the difficulty and delay occasioned by arterial hemorrhage in the line formerly chosen to the right or left, as accurately described in *THE MEDICAL NEWS* for 1883, vol. xlii. p. 436.

In *THE NEWS* for January 16, 1886, we presented a record of two operations for digital divulsion of the pylorus, performed upon the same day, July 6, 1885, in St. Luke's Hospital, New York, by Dr. CHARLES MCBURNEY, both of which were unfortunately fatal. One of the women was certainly a fair case for the operation, as her only lesion was a pyloric stenosis, but in the divulsion a laceration occurred which ended fatally by hemorrhage. In his paper Dr. McBurney writes: "In Ancona's article the statement is made that Loreta claims to have performed the operation twenty-two times, and *always* with

success." Dr. Ancona in his paper writes: "In a letter addressed to me July 1, 1885, he (Loreta) writes, 'besides these cases that I have cited in my pamphlet (three), I have practised this operation nineteen times, and always with success.'" There has evidently been a misunderstanding here, for case third of Prof. Loreta, operated upon on March 17, 1883, and reported by Dr. Harris in *THE MEDICAL NEWS* for April 21, 1883, died in thirty-seven hours from shock. Dr. Ancona also makes Prof. Loreta responsible for the statement that Drs. Cattoni, of Florence; Giommi, of Cesena; Poggi, of Bologna; Mazzoni, of Rome; and Jarini, of Brescia, had all performed the operation with success.

We have only to refer again to vol. xlii. of this journal, where Dr. Mario Giommi's case of February 1, 1883, is reported as having died of shock. There were certainly two deaths from the first four operations, as we reported nearly three years ago. Prof. Loreta has, probably, performed *epigastrotomy* twenty-two times, as papers and letters from Bologna show that one operation was performed for the relief of suffering occasioned by fixation of the stomach from adhesions; another for the stretching of bands which contracted the viscus into the form of a transverse colon; and that two others were exploratory, to determine the true character of the existing pyloric lesions, one of which was found to be cancerous, with an extension to the liver, and the other a hyperplasia closing the orifice. In not one of these four cases was cardiac or pyloric divulsion employed.

Writing of the importance of the operations devised by Loreta, Dr. Peruzzi says: "Chronic ulcer of the stomach is very frequent in Italy. Frequent, no, but not very rare, . . . more frequent than in the other countries of Europe." Fatal in its termination, the cure of the stenosis cannot be too highly valued, and, especially, because it is rarely fatal as an operation, except when performed in cases *in extremis*. Nearly two years after the first digital divulsion of the pylorus, the subject, Cecconi, remained in good health. Diseases of malnutrition are certainly very common in Italy, where pellagra has its 100,000 victims, and where rachitic and malacosteon deformities are so often encountered. This being the case, we may expect to find dyspepsias, with dilatation of stomach, chronic ulcerations, pyloritis, etc., ending in the conditions which can only be remedied by dilating the stenoses. But for the prevalence of death by starvation, Prof. Loreta would never have attempted such a hazardous step as his operation must have at first appeared to be.

THE MANAGEMENT OF THE PLACENTAL PERIOD.

THE conduct of the third stage of labor still invites new observations and excites new controversies. Most practitioners had settled upon the Dublin, or

upon the Credé method, when, in some parts of Germany, at least, warm advocates of the expectant treatment appeared, who attributed to the other methods more or less serious consequences. FELSSENREICH, in the January number of the *Wiener Klinik*, gives, as the result of the expectant plan followed in 13,904 cases, a puerperal morbidity of 6.78 per cent., and a puerperal mortality of 0.44 per cent.

In regard to the way in which the placenta is separated from the uterus, he adopts the views of Ahlfeld. The essential factor in this detachment is the reduction of the uterine surface to which the placenta is attached; the separation begins at the central part of the placenta, for there the connection is weaker than at the periphery, and by this central separation a cavity is formed which is filled with blood through aspiration. This retroplacental blood accumulation, by its pressure, causes detachment of the placental periphery, and also partly of the membranes, while this same pressure forces that part of the organ toward the uterine cavity. This process has been observed in a case of Porro operation. The blood which accumulates between the uterus and the placenta is claimed to act also as a tampon, and to prevent further bleeding.

This method of placental detachment is not now described for the first time, as it is many years since Desormeaux and Dubois gave essentially the same explanation, restricting it, however, to those cases in which the placenta was attached to the fundus of the uterus, as at least the usual method of detachment. They state that, as the result of the separation of the central portion of the placenta, there is formed "a lenticular cavity, limited circularly by the adherence of the border of the placenta, a cavity in which a mass of blood constantly accumulating concurs to complete the detachment."

These authors, however, held that if the placenta was attached to the walls of the body of the uterus, the separation might begin at its centre, or at its upper or lower border. Of course, if, as taught by Ahlfeld, Felsenreich, and others, central detachment is the rule, the placenta will, in almost all cases, present at the os uteri by its foetal surface, and not, as especially insisted upon by Matthews Duncan, by its margin, for it necessarily results that the portion of the placenta forced furthest down in the uterine cavity during detachment, will be that portion of the foetal surface corresponding with the centre of the uterine surface where the blood accumulation has taken place; so too in this mechanism, a turning out of the membranes from the foetal surface of the after-birth occurs, so that their delivery is last. Certainly new observations are necessary to disprove or to confirm the carefully conducted experiments of Duncan. His views have been adopted by many obstetricians, especially by Credé and Fehling; on the other hand,

they have been doubted by Tarnier, and the observations of Pinard and of Ribemont-Dessaignes proved that in seventy-seven cases the placenta presented its foetal surface sixty-three times.

As to when the detachment of the placenta takes place, Ahlfeld's opinion differs from that generally held, for he states that in presentation of the head the placenta comes to the mouth of the womb when the hips leave it; while Jacquemier, on the other hand, held, as indeed have most obstetricians up to the present, that this separation did not begin until after the expulsion of the foetus, or, at most, not until the last parts had been expelled from the genital organs.

Ahlfeld states an interesting fact as to the relative amounts of blood lost with the detachment and the expulsion of the placenta, when a woman is lying upon her side or upon her back; this loss being one-fifth greater in the former than in the latter position, a fact which, certainly, is a strong argument for having the third stage of labor accomplished with the patient in the dorsal position.

Of course, accepting the theory of placental separation held by this author, there is necessarily hemorrhage in the placental period of labor. On the other hand, it should be remembered that Duncan has maintained that the absence of hemorrhage is the rule in the normal delivery of the placenta.

Felsenreich describes, in the concluding part of the contribution, his method, which seems very far from being a strictly expectant one after the birth of the child. The uterus stands high at the arch of the ribs; the placenta is not yet expelled, but is already detached, and lies with retroplacental hæmatoma in the vaginal vault and in the under uterine segment. Emptying the bladder, bringing the uterus in the median line, irritation of the fundus, and a gentle pressure during contraction, will often result in the expulsion of the placenta. In other cases in which the placenta is still in the uterus, even half an hour or an hour after the birth of the child, he recommends persevering and suitable irritation, and massage of the uterus, and if failure occurs, then Credé's method.

We think our readers will conclude that such expectant treatment, as followed by Felsenreich, is scarcely deserving of the name.

A SUBLIMATE SOAP.

SEVERAL of our German exchanges contain notices of the successful preparation by Geissler, of Dresden, of a sublimate soap, prepared by admixture with an excess of the fatty acids. It will keep for months and promises to be of special service in the treatment of certain skin affections, but more particularly for purposes of disinfection. In *Fortschritte der Medicin*, No. 4, 1886, Johne, of Dresden, communicates the

results of experiments with it in a composition of 1:100, and he has determined that anthrax filaments containing spores lose their infectious properties in half a minute, and that it destroys with equal rapidity the blue-milk bacillus. The resisting power of the spores of anthrax is notorious, and an agent which is sufficiently active to destroy them in such a short space of time may be guaranteed to kill all forms of germs.

John remarks that in such a soap, surgeons and pathologists possess an extraordinary portable, convenient, and active antiseptic which has the great advantage over watery solutions of other disinfectants, that it comes in most intimate contact with the oily skin and acts at the same time as a cleansing and disinfecting agent.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, February 23, 1886.

THE PRESIDENT, CHARLES MCBURNEY, M.D.,
IN THE CHAIR.

EXCISION OF THE PYLORUS FOR CARCINOMA.

DR. SANDS presented to the Society a specimen removed post-mortem from a man upon whom he had operated for cancer of the pylorus. He read the following record, transcribed from the case-book of the Roosevelt Hospital.

Frank Vosberg, aged thirty-one years, from Sweden, married, coachman; admitted March 12, 1885.

The patient has been in the medical division of this hospital for past nine days, and to-day was transferred for treatment. For the past three years he has been suffering from dyspeptic symptoms, from vomiting, and regurgitation of food. Two years ago he began to lose flesh and strength, and has been slowly emaciating since that time. He has had no pain.

On admission, patient greatly emaciated; weight ninety-three pounds; abdomen retracted. Examination by Dr. Delafield. Dilatation of stomach; a hard, movable, nodulated tumor can be felt at the pyloric extremity of the stomach, probably carcinoma. Patient was treated previous to the transfer by washing out the stomach, and by a diet of koumys, alternating with peptonized milk, and enemata of beef peptonoids.

Physical examination: Lungs normal; urine straw colored, alkaline, specific gravity 1.020, no albumen.

Treatment. Ether, operation; Dr. Sands (room 5); carbolic spray in room for seven hours previous to operation. Sponges and napkins thoroughly disinfected, and kept in a carbolic acid solution 1 to 20. When used, they were first thoroughly wrung out in hot water. Abdomen carefully washed and disinfected. Incision made transversely, about three and a half inches long, directly over pyloric extremity of stomach. The dissection was carefully made until the peritoneum was reached.

All hemorrhage was stopped by catgut ligatures (previously kept in alcohol and bichloride solution 1:1000). The peritoneum was nicked, after being raised with a

pair of forceps; the opening was then enlarged by slitting it up with a curved bistoury. The pylorus could be plainly seen, and was found to be freely movable, there being no adhesions. The walls of the stomach were hard, and apparently infiltrated with a new growth. The various peritoneal reflections were carefully separated from the walls of the stomach by the finger, and every bleeding vessel secured by a double ligature before division. The intestines showed no tendency to protrude, but were protected by napkins, absorbent gauze; and large flat sponges wrung out in warm water.

After the peritoneum had been separated the pylorus was enclosed between two sets of clamps (Rydygier's); these were made of steel and covered with rubber, and were secured in place by rubber strings. The stomach was then cut through about one and a half inches to the left of the pyloric orifice. The muscular coat was greatly hypertrophied. As the clamps were loosened the viscus was held in place by vulsellum forceps. Profuse bleeding from many points followed the removal of the clamps, but was easily controlled by renewing the pressure. The bleeding points were each secured and ligated with catgut ligatures. The clamps were then removed, the stomach held out of the wound, and protected by warm sponges. The pylorus, with a small portion of duodenum, was then cut off with scissors. About four inches of the viscus were removed. A number of bleeding points in the wound were secured and ligated. Very little, if any, blood escaped into the peritoneal cavity.

The pancreas was seen and appeared healthy. The under surface of the liver and gall-bladder looked healthy. The wound of the stomach left an orifice about three inches in diameter. The edges were brought together for about one and a half or two inches by seven interrupted silk sutures, introduced from within (Maydl's), and by a row of Lembert's sutures externally. The duodenum was brought into apposition with the stomach by twenty-two uniting sutures of silk, reinforced by a second row on the anterior aspect, of six Lembert's sutures, four of silk and two of catgut. The muscular wall of the stomach was so much hypertrophied that great difficulty was experienced in turning in the peritoneal surfaces. Careful examination revealed no weak point. The gut and the portion of the stomach about the wound were carefully wiped off with a warm sponge. The peritoneal cavity was not cleansed. The wound was then brought together by seven silver wire sutures passing through the entire thickness of the abdominal walls, and six superficial sutures of the same material passing through the skin. The wound was dressed with iodoform, and a large flannel bandage was applied.

The operation required almost four hours. During this time the pulse continued good except just before the conclusion, when it became feeble and was lost at the wrist. Twenty-four hypodermatics of whiskey, each half a drachm, were given in a short time, followed by whiskey, two ounces, per rectum. Patient was then removed to bed, covered warmly, hot bottles to sides and feet, and the foot of the bed elevated.

7:30 P. M., the pulse gradually improved and became of fair force, though at times it would become weak. Patient was perfectly quiet, but very weak. Whiskey, half an ounce, per rectum.

8.30 P. M., pulse suddenly became weak and almost disappeared at the wrist. Ten hypodermatics of whiskey, each half a drachm, were given, with marked improvement. Pulse 120; resp. 20; six minims of Magendie.

10 P. M., patient fell asleep soon after receiving the morphine, and remained quiet for one and a half hours. Pulse suddenly became very feeble and respirations shallow. Whiskey, half a drachm hypodermatically and one ounce per rectum.

12 M., temp. (axillary) 98.6°; pulse 124; resp. 18. Awake for a few minutes, but has been sleeping quietly most of the time. He has very little pain, is perfectly conscious, and says stomach feels sore.

13th.—12.25 A. M., whiskey, one ounce per rectum. 2.15 A. M., foot of bed lowered. 3 A. M., patient has been awake for some time, is quiet, and has no pain; complains of feeling too warm. Pulse 120.

6.30 A. M., temp. 98°; resp. 25; pulse 112. Has been sleeping most of the time. Whiskey, one ounce per rectum. 8 A. M., patient awake only about two hours during the night. Looks very weak this morning; face drawn and pinched; eyes deeply sunken. 8.40 A. M., whiskey one-half an ounce; beef peptones per rectum. 10 A. M., temp. 98°; pulse 108; resp. 27. 10.15 A. M., pulse became very weak, resp. shallow. Whiskey, one drachm hypodermatically, with marked effect. 11 A. M., pulse feeble, 104. Whiskey, one ounce per rectum. Patient lies quietly in bed, and is perfectly conscious; has slight abdominal tenderness on pressure.

12.30 P. M., six minims of Magendie. 1 P. M., enema of whiskey, half an ounce. 2 P. M., temp. 98.6°; pulse 104; resp. 24. Slept one hour. 2.30 P. M., two ounces of urine drawn by catheter. 5 P. M., whiskey, one ounce, per rectum. Complaints of pain in stomach. 6.30 P. M., temp. 98.8°; pulse 103; resp. 27. 7.20 P. M., enema of four ounces (peptones, three ounces; whiskey, half an ounce). Enema to be repeated *o. c. h.* Patient allowed to hold small pieces of ice in his mouth, but swallowed none of the water. Soon after he received the ice he complained of pain and colic followed by a little nausea.

9 P. M., five minims of Magendie. Ordered peptonized milk, half an ounce, per mouth, *o. i. h.*; ice *o. i. h.*, alternating every half hour. 10.35 P. M., patient very anxious for sleep. Has been awake nearly all day. Had no pain after taking milk.

14th.—1 A. M., whiskey and milk, each half an ounce. 2.30 A. M., pulse 150; resp. 25; whiskey, two drachms, hypodermatically.

Two movements from bowels. Pulse almost imperceptible. 3 A. M., five minims of Magendie. Patient failed to rally; gradually sinking; and, at 4.15 A. M., died. Temp. (rectal) after death, 101.6° F.

Carcinoma of pylorus; resection. Report of Dr. Francis Delafield. The portion of pylorus resected measured two and three-fourths inches in length. Its peritoneal coat was unchanged. The muscular coat was very much thickened, especially over the greater curvature. The connective tissue coat is also very much thickened, especially over the lesser curvature. The new tissue is composed of ordinary basement substance, in which are little rows of small polygonal cells, and many large elastic fibres. The thickening reaches its greatest development one and three-fourths inches above the pylorus.

The muscular layer at the blind ends of the gastric tubules (muscularis mucosæ) is also hypertrophied.

The glandular coat is much thickened, especially over the lesser curvature and posterior wall, where it projects in the form of papillæ. The thickening is due to a growth of round-celled tissue, a hypertrophy of the gastric tubules of irregular form and shape.

The conditions are those of carcinoma of glandular type, associated with an excessive hypertrophy of the adjacent tissues.

Autopsy ten hours after death. The body is much emaciated. The heart is small. The lungs are anæmic. The liver and spleen are small. The colon in its upper half contains feces; the rectum is empty. The small intestine, except the duodenum, is empty. The kidneys are normal. On opening the abdominal cavity the pyloric end of the stomach and the duodenum showed some congestion of their peritoneal coats; but there was no blood, pus, or fibrin. The stomach and duodenum were of ordinary size, and contained a considerable quantity of brownish fluid. The line of resection was completely united, with but a moderate production of cells. Above the line of resection the wall of the stomach is somewhat thickened for about six inches. This thickening is especially marked on the lesser curvature, where a narrow growth projects inward for a length of four inches. This long narrow tumor is composed principally of the hypertrophied muscular coat and thickened mucous membrane. There is the same new growth of glandular tissue here as in the resected portion of the stomach, so that the new growth extends above the line of resection.

Remarks.—Dr. Sands had little to add to the account above given, which he desired to record as an example of unsuccessful operation. He is not prepared to condemn the operation without a fair trial, but he believed that only a few cases would be found in which it would prove to be expedient. In commenting on the case reported, he called attention to the following points:

1. The late period at which the operation was undertaken. This must continue to happen, so long as such cases are regarded as medical, rather than surgical.

2. The length of time required for the operation. This cannot always be avoided, as it must be done with care, and sometimes, as in the present case, under circumstances of unusual difficulty. The difficulty here arose in part from the great thickness and vascularity of the stomach at the line of section, and, in part, from the employment of Rydygier's clamp, which undoubtedly caused delay. In another similar case, I should rely on the fingers of an assistant.

3. Post-mortem examination showed that the cancerous infiltration of the stomach extended beyond the line of section. This must often be unavoidable; and it may be fairly questioned whether, in such cases, in which narrowing of the pyloric orifice is the prominent symptom, Loreta's operation of divulsion of the latter would not be safer, and, therefore, preferable. I believe that it would, and regret that I did not resort to it in the case reported.

DR. MARKOE said that he was present at the operation, and was very much pleased with everything pertaining to its performance, except the action of the clamps, which was very unsatisfactory.

DR. GERSTER remarked that in the light of Dr. Sands's

experience it would seem that Billroth's method of operating without using the clamps—that is, by making an incision through the walls of the stomach gradually, and tying each bleeding vessel as it was cut—was worthy of consideration.

DR. SANDS said that it was the better method, and was the one which was resorted to in the latter part of the operation.

DR. GERSTER asked whether the stomach was found perfectly empty.

DR. SANDS replied that it was; that it had been thoroughly washed out with a salicylic fluid just prior to the operation.

DR. GERSTER said he asked the question because in a recent case in which the stomach was washed out about half an hour before the operation with a borosalicylic solution, while the sutures were being put in the patient vomited a large quantity of brownish liquid which undoubtedly was not in the stomach when the patient was placed upon the table. He regarded this as a question of some importance, because if the stomach contains eight or ten ounces of fluid, serious soiling of the abdominal cavity might be caused. Nothing of this kind was mentioned in Billroth's cases, who does not use ether. Ether produces a large quantity of mucus in the respiratory, and to a certain extent in the alimentary tract. Dr. Gerster also mentioned that in a case of gastrotomy for cancer of the œsophagus, and in which it was certain the stomach was empty, because the patient was starving to death, and in which ether was administered, a large quantity of fetid glairy mucus rushed out of the stomach when the incision was made. He thought that the use of ether in these cases is not as advantageous as chloroform. He had seen also in this case of exploratory incision that, although the operation lasted for only a short time, not more perhaps than half an hour, and in which the patient was in fair condition and without any stenosis whatever, the pulse became very weak, and if exsection had been performed, the patient would have died of shock, or whatever it might be called.

OVARIAN TUMOR.

DR. L. A. STIMSON presented a portion of an ovarian tumor which weighed fifty-seven pounds, and which he removed a few days ago. The specimen was interesting chiefly with reference to two points: first, the size of the cyst; and, second, the large area of flat adhesion to the abdominal wall.

The patient was twenty years of age, weighed 147 pounds, and was admitted to the Presbyterian Hospital two weeks ago, with an abdominal tumor which she first noticed in March, one year ago. An idea of the size of the tumor at the time of admission was indicated by the fact that she measured around the waist forty-six and a half inches, and that the heart was displaced to such an extent that the apex beat was in the third intercostal space. The tumor occupied the entire abdomen, and expanded the lower ribs. The diagnosis was ovarian cyst, probably multilocular in character, and the operation was performed on Wednesday last (February 17th). The tumor was exposed by an incision four inches in length below the umbilicus, and after the peritoneal cavity had been opened, and some of the cyst contents withdrawn, it was found that the sac was so adherent above, in front, and on the right side, that

it became necessary to extend the incision above the umbilicus. It was estimated that the adhesions occupied an area of about a square foot, and they were divided by the use of the thermocautery after partial evacuation of the cyst had been effected by means of the trocar; oozing points were touched with the cautery or tied. The toilet of the peritoneum was made, the omentum evenly spread out over the intestines, and then a rubber drainage tube passed from the lower angle of the wound into Douglas's pouch, and the wound closed with four button-wire sutures, to take the strain, with a continuous catgut suture through the peritoneum, and interrupted silkworm gut sutures in the skin and muscle. The case had progressed without unfavorable symptoms, the drainage tube was removed to-day (22d), and the wound is healing without suppuration. [March 1st. The healing is now complete. The last sutures were removed February 27th, and the wound was then absolutely dry and healed.]

USE OF ATROPINE TO PREVENT SHOCK AFTER OPERATIONS.

There was one point to which Dr. Stimson wished to direct attention. For upward of three years he had been in the habit, in cases which were to undergo grave operations, of employing a small quantity of atropine hypodermatically just before beginning the operation, to diminish shock. He had been led to this use of the drug by knowledge of the fact established by physiologists that it would prevent the inhibitory action upon the heart of efferent pneumogastric currents excited by irritation of important sensory nerves. He had tried it in a number of cases in amounts varying from $\frac{1}{8}$ th to $\frac{1}{16}$ th of a grain, and he thought that it had directly contributed to the success of the operations. It was difficult to speak with precision on such a point, because of the lack of positive evidence, and he could only say that the patients thus treated had left the table with a better pulse and less collapse or shock, than those who had not been protected by the use of atropine, and he, therefore, commended it to the attention of the Society.

FOREIGN BODY IN ŒSOPHAGUS; DEATH FROM PERFORATION FOLLOWING EFFORTS TO EXTRACT IT.

DR. W. T. BULL presented a specimen with this history:

On November 11th I was called to see a gentleman suffering from chronic mania, who was supposed to have swallowed a foreign body. He has been of unsound mind for two years, but was in fair physical condition. At intervals he had refused to take nourishment, and had been fed of necessity per rectum or with the œsophageal tube. On attempting to pass such a tube the day before I saw him, his physician found it arrested just at the entrance of the œsophagus. On examination with œsophageal bougies and probangs, I found the œsophagus wholly occluded by a foreign body at a point nine inches from the teeth, just below the cricoid cartilage. It was impossible to pass any instrument beyond the body, which was hard and unyielding to the instruments, and gave a "click" almost as sharp as that of a vesical calculus. Œsophagotomy was determined upon for the following day, provided the body could not be extracted by forceps, of which no suitable ones were at hand. The man was nourished

per rectum, and was able to walk about freely. He stated, on close questioning, that he had swallowed at different times stones as large as an inch in diameter, and horse-chestnuts, in order to improve his voice.

The following day (Nov. 12th), before proceeding to œsophagotomy, I thought it prudent to try to extract the body with forceps, of which I had several sorts, as the manipulations were very well tolerated. But I could not succeed in the course of ten minutes in getting any hold on it, nor could I get the finest instrument beyond it. A forceps, such as I show you, called Krohne's forceps, brought up several grape-seeds, and finally dislodged the body, which passed five inches further down the œsophagus, fourteen inches from the teeth. The body could be distinctly felt at this point, but it could not be caught, though the instrument, without any force, seemed to pass by it. There was no blood on or in the blades nor in the mucus spat up. A large stomach-pump tube was made to impinge lightly on the body without dislodging it. About fifteen minutes were passed in these manipulations. After the passage of this instrument the man felt faint, and shortly after complained of pain in the epigastrium. He was put to bed, given whiskey hypodermatically, and soon revived. The pain recurred later, and necessitated the administration of morphine hypodermatically.

The next day (Nov. 13th) the pulse was 136, temperature $101\frac{3}{8}^{\circ}$, and there were great dyspnoea and prostration. The pain in the epigastrium continued. He died November 14th, at 2 P.M. At the autopsy the left pleural cavity contained a mixture of various ingesta in a state of decomposition, and the lung was collapsed. The right had old pleuritic adhesions. Opposite the lower third and fourth inches of the œsophagus there was suppuration in the tissues of the posterior mediastinum, and three inches above the cardiac orifice of the stomach there were two perforations of the œsophagus itself, which were opposite the most prominent part of a horse-chestnut, measuring one and a quarter inches in its two diameters, which was firmly impacted. These perforations were on the left wall, situated more posteriorly, had rather sharp edges, and one was as large as half the top of a lead pencil, the other one-half smaller. The stomach was empty, and the intestine contained no other foreign body. There were abundant and dense old peritoneal adhesions.

To illustrate the success which may follow attempts at extraction, I would like to put on record

TWO SUCCESSFUL CASES OF EXTRACTION OF FALSE TEETH FROM THE ŒSOPHAGUS.

The first of these was a married woman, thirty-five years of age, whom I saw, in 1882, twenty hours after she had swallowed a plate containing two front teeth. She had much pain, and could only swallow water, and that with pain. A probang detected the body arrested just below the cricoid cartilage, and the "coin-catcher" was easily passed beyond it and brought it out on withdrawal.

The second case was a farmer, nineteen years of age, who wore an upper plate with two teeth. He awoke one night with a sensation of choking and pain behind the sternum, and in the morning missed his plate. He was given emetics and vomited freely. The pain continued, and he was able to swallow only fluids.

In nine days, while he remained at home, he lost, according to his own statement, twenty-five pounds in weight. No attempts at extraction were made until I saw him, ten days after the accident. He was still well nourished, but excessively nervous and anæmic, and unwilling to try to swallow anything on account of pain. A probang detected the plate just above the cardiac orifice. I then passed a "coin-catcher," caught it, and drew it as far as the cricoid cartilage, where it stuck. On introducing the instrument again, the plate was dislodged and arrested at its first position, from which it was easily drawn as far as the cricoid, where the instrument lost its hold. This happened several times. I then passed one "coin-catcher" beyond the plate, and felt it catch its edge; a second one was passed to a point just below the cricoid sheath, by an assistant. The first instrument with the plate was then withdrawn, and so soon as it let go its hold on the body, the second one was drawn out, and the plate came with it. It measured one and three-eighths by two inches. There was no reaction and the man left for home in forty-eight hours.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, March 2, 1886.

THE VICE-PRESIDENT, LEONARD WEBER, M.D.,
IN THE CHAIR.

DR. SPITZKA exhibited

THE BRAIN OF A PORPOISE,

demonstrating the absence of the pyramidal tract in this animal, and the enormous size of the auditory nerve, which nearly equalled the lumbar cord of the same animal in transverse section. The comparatively small diameter and shortness of the segments of the lumbar cord, as compared with the dorsal segments, were dwelt upon. The brain weighed a few drachms less than forty-five ounces; the animal (a bottle-nosed dolphin) weighed 236 pounds, and was obtained through Mr. Eugene Blackford.

Dr. Spitzka then presented the specimens and history of a

CASE OF NEUROGLIOMATOUS HYPERTROPHY OF THE PONS OBLONGATA TRANSITION.

The facial, pneumogastric, and hypoglossal nuclei were distinctly involved. The following was the condition of the tumor and the involved structures: While the infiltration was diffused over a large area of the oblongata and pons, it was only in a comparatively limited compass that it could be considered as a destructive lesion. It had not advanced uniformly from a given original focus, but had extended in the direction of special tissues which seemed to favor its progress. Thus, compact nerve-strands seemed to oppose resistance, while ganglionic tissue acted as a guide. The consequence was that the raphé, most nerve-roots, and the great strands, such as the ascending root of the fifth pair and the restiform column, were either perfectly free or so slightly involved that it was difficult to determine whether they were affected. The vascular districts, particularly of a capillary character, which abound in the reticular field of the tegmentum, also favored the extension of the growth.

Where the lesion was at its maximum, no trace of the

normal tissues could be discovered. A finely molecular basis substance, crowded with bodies resembling neuroglia nuclei, but mostly of larger size, and others resembling the small variety of ganglionic cells, but without well-defined processes, predominated over the basis substance to such an extent that even in fairly thin sections nothing but these nuclei and granules could be seen. Many of these bodies were surrounded by a halo, resembling the cell capsule hydropsia, described by Hurbich and Forel; others were embedded in a hyaline material, presenting an appearance like that of a cell body, including a nucleus. This stained brown in alum-hæmatoxylin, while the nuclei stained a deep blue. The former were not stained by carmine. But the most remarkable feature was the bloodvessels of the neoplasm; these, distended to their utmost capacity, abounded in at least fourfold the number and size of the opposite side when unaffected. They presented every evidence of rapid growth and enlargement, and many were evidently newly formed, while signs of vascular new-formation were frequent. They were contorted in the most bizarre fashion imaginable. The blood within these vessels was in a condition of stasis; the vascular walls were exceedingly thin, and in many places ectatic. In several places the infiltration had undergone rarefaction, probably owing to softening and absorption of its hyaline products. An irregular spot of this kind was situated immediately caudad of and in the concavity of the genu facialis. Another was in the corresponding situation at the head of the roots of the vagus nerve. A third was in the very centre of the reticular field mesad of the pneumogastric rootlets. A fourth has been described as situated in the interolivary layer. In some sections the neoplasm did not cut well, and did not remain in the section, the cut surface showing the appearance usually presented by spots of malacia that have been hardened. This was the case with a spot in the very centre of a focus of the disease, which accurately corresponded to the middle abducens nerve-roots.

The motor nucleus of the right trigeminus was seriously involved. Sensory nucleus of the same in the exit level slightly involved. Right lower facial nucleus destroyed. Right abducens nucleus scarcely involved. Right vagus glosso-pharyngeal nucleus nearly destroyed in higher levels, free in the lowest. Left vagoglosso-pharyngeal nucleus slightly involved in intermediate levels. Hypoglossal nucleus destroyed on both sides in its upper, on the right side in the middle third. The nuclei of the fasciculi testes cannot be identified anywhere.

Of nerve tracts, the pyramids, the transverse pons fibres, and the cerebellar peduncles with their continuations, appear to be entirely free from disease.

The posterior longitudinal fasciculi are both normal above the abducens nuclei; in that level they show slight infiltration on the right side; in the hypoglossal level the right is intensely involved. The right solitary bundle, also known as the round and trineural bundle, is greatly involved in its proper substance in the exit level of the tenth and eleventh pairs; singularly enough its cephalic termination in the nervus intermedius, is free. The ganglionic substance in which the fascicle is embedded is entirely destroyed in the affected levels, and the destruction extends in the direction of the afferent and efferent fibres.

The nerve rootlets are mostly normal where identifiable. In all but the most intensely affected areas they pierce the lesion without showing any signs of disease. This is notably the case with the abducens nerve; some of the glosso-pharyngeal levels were lost. The abducens and vagus fibres, however, are distinctly less numerous on the right than on the left side. The right facial nerve, the peripheral overhardened portion of which appears normal, is the seat of intense degeneration. The axis-cylinders are destroyed.

The reader thought that in the light of the post-mortem findings, deducing from the intensity of the lesion its age, and correlating it with the observed symptoms, we may infer that the neoplasm originated in the reticular field, which it involved diffusely at the start, including in its area the emerging root of the right abducens and the facial nucleus; that it extended from the latter backward into the deep nucleus of the mixed system, and progressing toward the raphe and ventricular floor; in the transverse direction extended to the trigeminal nuclei, cephalad, and to the hypoglossal nuclei and posterior longitudinal fasciculi afterward; its latest invasion being the interolivary.

The gastric vagus nerve functions were the first to be involved in the thirteen months' illness; nausea and vomiting inaugurating the illness, and culminating in attacks of vertigo during the first four months of her illness; drowsiness, aggravated when the stomach was full, was a prominent symptom, and bulimia preceded death. The cardiac functions were involved seven months after the disorder first manifested itself, and became aggravated *sub finens* as well as the dyspnoea and precordial fears which are dependent on disturbances of the same nerve. The motor functions of the lateral set of nerves were also considerably involved. Difficulty of deglutition was experienced after four months in continually increasing severity so that swallowing finally became impossible. The paralysis of the palate was extreme for the last six months, and had been noticed in less degree since the fifth month of her illness.

With the above symptoms the destructive involvement of the right vagus nucleus, the invasion of the left nucleus, and the destruction of a part of the vagus roots, are in accord. The considerable involvement of the deep or motor nucleus in its upper levels, which I have proposed to term the nucleus of the pharyngeal muscles, is equally in harmony with the progress of their functional insufficiency.

Symptoms of irritation in several instances preceded the evidences of nuclear paralysis, or existed alone. Thus, spasms of the muscles of mastication preceded a slight evanescent paresis of these muscles. The motor trigeminus nucleus was involved, but not destructively so. The total paralysis of the facial nerve was preceded by facial spasm, and the last step in the extinction of the facial nerve functions, the paralysis of the uvula, was preceded by what can be interpreted in no other way than a contracture of the subsequently paralyzed half. It is an interesting fact that the stapedius paralysis which probably accounts for the tinnitus, went parallel with the paralysis of the external branches of the facial nerve, and not with the pharyngeal rami.

The subjective hemi-numbness, which at no time involved the left side of the face, was a crossed symptom, in harmony with all similar observations. It began four

and a half months after invasion, and as it increased became associated with hemi-paræsthesia, hemi-paralysis of the pressure sense, and ultimately with hemi-ataxia due to hemi-paralysis of the muscular sense. As the focus of the lesion lay in the mesal half of the reticular field, we may attribute the maximal disturbance of the weight and pressure sense to it, and the less disturbances, due to irritative pressure of nerve tracts, to the infiltrated but undestroyed fields near the ascending fifth root. The terminal loss of muscular sense is to be attributed to the terminal lesion of the interolivary layer.

The paper concluded with the following proposition: sensory disturbance of the extremities, when existing on the side opposite to a facial nerve paralysis, if due to a single local focus of disease, is as pathognomonic of a unilateral pons lesion as alternate paralysis of motion is. The difference between the two is merely one of altitude; in the former case, the lesion is in the tegmental part of the pons; in the latter case, in the transverse floor fibre mass of the pons, which, as is well known, includes the sagittal bundles of the pyramidal tract.

Paralysis of associated eye movements of the side of the lesion are peculiar to affections of the brain axis; they are, when thus situated, always due to disease of the tegmental part of the pons, and to that part of it which lies inside of the emerging root series of the fifth and seventh pairs. The interolivary layer and the other part of the lemniscus are to be excluded from this area, the focus of which appears to be near or in the posterior longitudinal fasciculus, as well as in the neighboring reticular area and raphé, and rather cephalad of the abducens nucleus than in the same level.

That form of associated eye movement paralysis, which manifests itself in inability to move the eye globes in one lateral direction in the horizontal plane, can be produced by lesion situated in and cephalad to the level of the abducens nucleus. It is for this reason that absolute paralysis of the external rectus muscle of that eye which is on the side of the lesion, is commonly combined with the associated movement disturbance, as in the case presented.

Nystagmic oscillation in the plane of the disturbed movement may occur in such a case, as is shown by the one to-night related. I believe that this is the first observation of the kind in which the cerebellum and transverse or cerebellar pons fibres were intact. This was not the case with Graux's patient, whose cerebellum was the primary seat of the tumor.

DR. M. A. STARR had observed in the specimens and diagrams presented an apparent implication of the acoustic nerve.

DR. SPIZTKA said this nerve was entirely unaffected, and explained its seeming implication.

DR. C. L. DANA made a brief preliminary report of a case which he thought would be interesting in connection with lesions in this region. The man, about forty-five years old, was brought into his ward with a history of having been ill a very short time. He was strong and robust-looking. He was found to have static ataxia; was unable to walk or stand. There was no motor paralysis in any of the extremities. There was anæsthesia of the temperature sense, of the tactile sense, and of the pain sense on the right side from the shoulder down, involving the right arm, right leg, and

right side of the trunk; the right half of the face was not involved. There was no anæsthesia of touch, temperature or pain sense on the left side, but in the left hand and arm there was the most marked ataxia which the speaker had ever seen. The arm showed no tremor or paresis, but any attempt to place it in a particular position would cause it to fly about in a most senseless manner. There were some cerebral symptoms, but the intellect was clear. In a few days there developed signs of vagus trouble; there was some difficulty in swallowing, partial paralysis of the vocal cords, inability to speak loud. The patient died after about three days from the entrance of food into the respiratory tract.

At the post-mortem examination there were found a small aneurism of the basilar artery, a recent thrombus of both vertebral arteries; near the upper aspect of the right half of the floor of the fourth ventricle was a small spot of softening. The latter lesion, it seemed to him, would account for the ataxia of the left arm. He had not yet prepared the brain, but had photographed it.

DR. A. D. ROCKWELL said the difficulty in locating cerebral lesions is greater than one's reading might lead him to suppose. Out of a large number of cases of hemiplegia which he had seen, there was only one in which the symptoms were so distinct that he felt quite sure as to the location of the lesion. This occurred about a year ago, in a man whom he saw with Dr. A. R. Garman. The patient had a profound apoplectic stroke; deep coma supervened, with unconsciousness for some time; there was hemiplegia upon the right side; upon the left side there was facial paralysis. There was conjugate deviation of the eyes. The symptoms were so distinct that he ventured to locate the lesion in the lower lateral portion of the pons. The patient died within a few days, but an autopsy was not obtained.

CORRESPONDENCE.

MEDICINE IN VIENNA.

The clinics—Morbus Viennensis—Antiseptic precautions in the maternity wards.

VIENNA, February 24, 1886.

As Vienna has lately assumed such prominence as a clinical centre and resort for the travelling physician, some facts explaining this preëminence may be of interest.

The "Common Hospital" was founded by the Emperor Joseph II., and opened in 1784. Its buildings originally comprised both hospital and poorhouse; these structures were adapted for their present use, and in 1869 united under one management. They are built in nine communicating courts, in a common enclosure having a total capacity of 3200 beds. The Vienna Clinic, or Hospital Medical School, began with 12 beds. It now has 700 at its disposal, which are included in the 3200. In addition to the 20 subdivisions of the hospital proper and 14 clinical divisions or wards, there are a number of pay wards of varying price, while a small fee is taken from all patients, foreigners paying more than Viennese.

The buildings are of stone, with stone stairs, thick walls, and wooden floors. In neatness and general

cleanliness, more than the average is attained; in equipment of baths, ventilating shafts, and accessory rooms, the wards are comfortably supplied; food, clothing, and bedding are good; the uniformed trained nurse is unknown; and in some wards the help is insufficient. A noted exception are the midwives, who have a special course of instruction from Prof. Gustav Braun, and a training and experience a physician might envy. The hospital staff is composed of a minister of sanitation, nine physicians of the first class, thirty of the second class, and twenty-two clinical assistants, in addition to the Pathological Institute, with its chief and assistants. The various supply departments have each a chief, responsible to the Imperial Government. The routine hospital work is done by internes. Each clinical subdivision has its laboratory for the use of the clinical assistant, while each ward has its laboratory, with microscope for internes' use. There is also a well-equipped general reading-room for physicians, with library and a "Silentium."

In addition to the lectures of the regular course are the clinics given by the professors, and of equal interest to the physician are the special courses given by professors and assistants. In addition to the hospital just described, is the Polyclinic in a separate building, conveniently situated; its instructors are, many of them, hospital professors.

It will be observed that a vast amount of material of different kinds is brought under one management, almost in one enclosure, and thoroughly utilized. London, Paris, Berlin, Heidelberg, Prague, Munich, and other cities offer opportunities either widely separated or limited to one or two subjects; by one who can spend the time and money to travel, much can be observed in many places, but in no one place such an aggregate as in Vienna. Such attractions and the presence of many foreigners have made living expensive, and have surrounded a residence here for study with many of the unpleasant features of a medical resort.

In the medical wards one hears frequently the "Morbus Viennensis" mentioned in the presence of its subjects. The name is easily explained when one learns that thirty or forty per cent. of all deaths are from this disease, tuberculosis, and so well known and commonly feared among hospital patients is this disease that it has received from clinical lecturers this mask. Its contagion is not doubted, and dried sputum generally serves as the means. Patients entering the hospital with other diseases, and having catarrh of the air-passages, are removed from the proximity of the tuberculous as soon as possible, as it is observed that such patients almost invariably become tuberculous. Primary tubercle of the lungs and genitalia occurs constantly; like syphilis, it may affect any organ of the body secondarily; septic processes become tuberculous, and syphilis as manifested in the larynx not rarely terminates in tubercle. The bacillus is found in urine, blood and sputum from lungs undergoing necrosis. Treatment is palliative only, no specific is known. Sputum is disinfected with five per cent. carbolic acid, it is thought hardly effectually.

The obstetric wards of the hospital have a capacity of 500 beds, divided between the famous Carl Braun, Ritter von Fernwald, and Professor Spalltt.

In the wards of the latter the hands of the physicians

are cleansed with *sapo-viridis*, and disinfected with corrosive sublimate, 1 to 1000. Carbolic acid and iodoform are used commonly about the patients. Douches are given only when a septic process in the uterus or vagina occurs. No sponges or cloths are applied, the parts are cleansed by a stream of carbolized water and by the hand; the lochia are received upon draw sheets, which are renewed frequently. After an intrauterine douche, a suppository of five centigrammes of iodoform is placed within the cervix; vaginal ulcers are touched with tincture of iodine and iodoform insufflated upon them. Diagnosis by palpation is carefully cultivated, vaginal examinations are as infrequent as possible. Forceps are used much less often than in America; the head is not compressed; difficult labors are generally terminated by nature's efforts, or by version, which is always performed when, in the practice of many others, the high application of the forceps would be made. Normal deliveries are made while the patient lies upon the left side, this posture being assumed when the head distends the valve. The head is controlled by the left hand of the accoucheur, passed over the symphysis from above, and between the patient's thighs, the operator facing the foot of the bed. The right hand supports the perineum, which is kept constantly moist with carbolized water. Lacerations of the perineum are infrequent: they are closed by the *serre-fine* when slight, by silk when severe, with the immediate operation when possible.

As prophylaxis against conjunctivitis, one application of a two per cent. solution of nitrate of silver is made to the eyes of each newborn child. Antipyrin is commonly used in gramme doses to reduce temperature, when the elevation is not excessive. Ice-bags and ice-cold compresses are used in inflammations.

The report of the last quarter shows 655 births, with a mortality of five mothers, two of whom died of eclampsia, and three from sepsis.

OBITUARY.

AUSTIN FLINT, M.D., LL.D.

THE profession will learn with profound sorrow of the sudden death, on Saturday last, of Dr. Austin Flint. This sad event occurred at his residence in New York as the result of cerebral hemorrhage.

Dr. Flint had been in his accustomed health, and had attended a meeting of the Faculty of Bellevue Hospital Medical College on Friday evening. Upon returning home, he retired to bed, apparently as well as usual. Toward midnight he complained of severe pain in his head. The symptoms of cerebral hemorrhage rapidly developed, and he soon became unconscious. Drs. Austin Flint, Jr., and E. G. Janeway were at once summoned, and on Saturday morning Drs. Isaac E. Taylor and W. T. Lusk were added to the consultation. All remedial measures, however, proved unavailing. Dr. Flint's vital powers slowly ebbed, consciousness did not return, and at 2 P. M. of that day he died.

Dr. Flint was born at Petersham, Mass., on October 12, 1812, of a lineage honorable in medicine. His great-grandfather, Dr. Edward Flint, practised at Shrewsbury, Mass.; his grandfather, after whom he was named, was a private and afterward a surgeon in the Revolution-

ary Army, and died at Leicester, Mass., in 1850, at an advanced age; and his father, Dr. Joseph H. Flint, was a distinguished surgeon, residing at Northampton, Mass.

After pursuing his collegiate studies at Amherst and Cambridge, Dr. Austin Flint began his medical studies at Harvard, and received his degree from that school in 1833. After practising for three years at Boston and at Northampton he settled in Buffalo, and by his numerous and valuable contributions to medical literature he rapidly rose into professional prominence. In 1844 he was appointed to the Chair of the Institutes and Practice of Medicine in Rush Medical College, Chicago; but he held the position for only one year. In 1846 he founded the *Buffalo Medical Journal*, and during the ten years of his editorship it was conducted with marked ability and success. In 1847, in conjunction with Profs. James P. White and Frank H. Hamilton, then of Buffalo, he founded the Buffalo Medical College, and he filled the Chair of Medicine in its faculty until 1852, when he accepted the Chair of Theory and Practice in the University of Louisville. In 1856 he returned to Buffalo and again became connected with the Buffalo school. The winters of 1858 to 1861 were passed in New Orleans, Dr. Flint having accepted the Chair of Clinical Medicine in the New Orleans School of Medicine.

In 1859 Dr. Flint removed his residence from Buffalo to New York City, and shortly afterward he was appointed to the Chair of Pathology and Practical Medicine in the Long Island College Hospital, and this position he held until 1868. In 1861 he was appointed to the Chair of Medicine upon the organization of the Bellevue School, as well as Visiting Physician to Bellevue Hospital. In 1872 he was elected President of the New York Academy of Medicine, and in 1883-84 President of the American Medical Association.

Dr. Flint's contributions to medical literature were numerous and valuable. In 1852 he published his "Clinical Reports on Continued Fever," and in the same year the American Medical Association awarded to him a prize for his essay "On Variations of Pitch in Percussion and Respiratory Sounds, and their Application to Physical Diagnosis." In the following year he wrote his clinical reports on dysentery and on chronic pleurisy. All of these papers were translated into French, and reprinted at Paris in 1854. In 1856 he published his "Physical Exploration of the Chest and the Diagnosis of Diseases Affecting the Respiratory Organs," which has passed through two editions. In 1859 his "Practical Treatise on the Diagnosis, Pathology, and Treatment of Diseases of the Heart" was issued, and in 1870 a second edition appeared.

The work, however, which added most to his reputation as a medical author was his "Treatise on the Principles and Practice of Medicine," which appeared in 1866, and which has passed through five editions. It at once took a high position, and became a favorite text-book in all the medical schools of the United States. In addition, Dr. Flint has also written a work on "Clinical Medicine," a volume on "Phthisis," essays on "Conservative Medicine and Kindred Topics," and a "Manual of Auscultation and Percussion." He contributed the articles on "Pulmonary Phthisis," and on "Neuroses of the Heart," to the "System of Practical Medicine by American Authors." In addition, he has been a voluminous contributor to periodical literature, and the pages of *The*

American Journal of the Medical Sciences, and of *THE MEDICAL NEWS*, were frequently enriched by the labors of his pen. The last elaborate article which he published was on "The Mitral Cardiac Murmurs," and appeared in the January number of *The American Journal of the Medical Sciences*.

Dr. Flint's life was characterized by unwearied activity and useful labor in his profession. As an author, teacher, and practitioner, he was alike eminent. As a friend, counsellor, and collaborer, he was universally beloved and respected. He possessed a fine presence and amiable bearing, and his kindly face and benevolent smile will remain indelibly impressed upon the memory of all who knew him.

Of the loss which the profession has just sustained, it has been well said, "His death leaves a great gap in the ranks of the profession; but those who knew him only as a physician, knew him very imperfectly indeed. To a mind of singular breadth and wisdom, accustomed to rest its judgments upon an enormous range of experience and of knowledge, he united in his professional career the warmest sympathies and the most generous appreciation for everything that was good and beautiful. His heart was as large as his intellect was comprehensive, and the gracious gentleness and dignity of his nature adorned and rounded out a character of exceeding completeness and loveliness. We have never known a better, nobler, or a more useful man, and we bid him the last farewell with the feeling that the world is more barren and life less fruitful now that he is gone."

His widow, and his son Dr. Austin Flint, Jr., survive him.

At the Commencement of the Bellevue Hospital Medical College, held on Monday evening, Professor John C. Dalton paid the following graceful tribute to Dr. Flint's memory. He said:

"Gentlemen of the Faculty and of the Medical Class: I am sure there is but one thought in the minds of all who are here in this room this evening. A familiar and venerated presence no longer meets your eyes from its accustomed place. A voice to which you have listened, always with delight and profit, for so many years, is suddenly quiet on this returning anniversary. And yet, I doubt whether our departed friend and counsellor ever wielded over his colleagues or his class such an overwhelming influence as he does at this moment.

"He speaks to you to-night, not with the imperfect utterance of an occasional discourse or a momentary topic, but with the complete and unmistakable language of a lifetime. He stands before you now in his entire character, ennobled by the record of his qualities and deeds, as the acknowledged representative of all that is best in the study, the teaching, and the practice of medical science and art. It was the universal verdict, from which I have never heard a dissenting voice, that among all the eminent men of the profession in this wide country, his was the one name which would be inevitably selected as the first. His single-minded devotion, untiring industry, and indomitable strength of purpose raised him long ago to the position which he held to the last day of his life. And now, after conducting your studies through the session just closed, he has graduated before you, he has taken his final and highest degree, conferred by the Power that is Supreme

over us all; and the parchment of his biography now bears the stamp of Emeritus.

"For you, gentlemen of the medical class, I am sure that Dr. Flint's teachings are far from being ended. I can wish you nothing better than that you carry them with you throughout the future, and that you never cease to remember his instructions and to emulate his life."

At a meeting of the Faculty of the Bellevue Hospital Medical College held March 15, 1886, on motion it was resolved:

That this Faculty keenly sympathizes with the wife, son, and family of our lamented *confrère*, Professor Austin Flint, in their irreparable loss of a tenderly devoted husband, father, and counsellor:

Yet that in their grief they will find consolation in that they can ever cherish the memory of his spotless life, his greatness and his goodness:

That the son, grandson, and great-grandson of eminent physicians and surgeons, entrusted by nature with medical skill and sagacity, so nobly fulfilled his mission;

That his powers of thought and action were preserved in their fulness of vigor to the close of his intellectual and benevolent career:

That his prayer was granted in being spared from lingering illness:

That as he had mitigated the sufferings of others he himself was saved from suffering:

That after a day and evening of arduous medical duties he retired to his painless couch of death—

"God's finger touched him and he slept."

Resolved, That this Faculty has been deprived in this dispensation of Providence of one of the most illustrious founders of this College, whose professors felt honored by having their names enrolled with his:

One through whose instrumentality other medical colleges have been established in our country.

One whose pupils fill chairs in our Faculty, while others hold distinguished positions in similar institutions of medical instruction;

One whose self-sacrificing and gratuitous services have been cheerfully rendered to the sufferers in Bellevue Hospital and other hospitals in our city and country for the last half century.

Resolved, That our city and the world has lost in his death one whose noble presence and tender sympathies in the sick-room cheered the heart and secured the confidence of the afflicted;

Whose remarkable record is justly the pride of any profession in any land;

Whose gifts and labors were recognized at home and abroad;

Who was honored with positions of distinction in America and Europe rarely won;

From whose eloquent lips thousands of students in many colleges have been taught the science of medicine, and by whose graphic pen tens of thousands have gained medical knowledge, and whose numerous and valued works translated into many tongues, will continue as fountains of instruction to future generations.

Resolved, That while our heads bow in grief at his sudden death, our hearts rise in gratitude to God for his prolonged life of widely extended usefulness.

Resolved, That a copy of these resolutions be en-

grossed and transmitted to his family, and that they be given for publication to the medical and secular journals of this city.

At a special meeting of the Executive Committee of the New York County Medical Association, the following was unanimously adopted:

Whereas, it has pleased God to remove from our Association our beloved and highly honored friend, Professor Austin Flint, M.D., LL.D., one of our founders, and an ever willing co-worker: We desire to record the great appreciation of our loss.

Professor Flint, from early manhood, has ever been an indefatigable laborer in the field of Medical Science, and for half a century has been one of the most accomplished teachers and writers in the profession.

His varied experience, extending over different portions of our country, enabled him, on his settling in New York City, at once to take the foremost place in the profession. As a consultant, he was without a peer; his calm judgment, urbane manners, and strict conscientiousness made his presence ever welcome to his brethren. As a gentleman, he will be held in grateful remembrance by all with whom he came in contact; his charities were proverbial.

His death will be the cause of universal sorrow, especially occurring at a time when his deliberate counsels are most needed. We can never forget that genial countenance, those cheerful words, and that buoyant disposition, which, amid the greatest of sorrows, always pointed out the ray of light affording hope.

NEWS ITEMS.

COMMENCEMENT OF THE BELLEVUE HOSPITAL MEDICAL COLLEGE.—The twenty-fifth annual commencement of the Bellevue Hospital Medical College was held last Monday evening in the Carnegie Laboratory in East Twenty-sixth Street. The medical degree was conferred upon one hundred and thirty-nine candidates.

Owing to the death of Dr. Austin Flint, who was a member of the faculty, the dinner given by the faculty each year to the graduating class was dispensed with, and the only ceremony, aside from the conferring of the degrees, was the eulogy upon Dr. Flint, pronounced by Professor John C. Dalton, of the College of Physicians and Surgeons. The room was appropriately draped in mourning, and a portrait of the dead professor hung over the stage. After conferring the degree of M.D. upon the graduates, Dr. Isaac E. Taylor, President of the Faculty, introduced Professor Dalton, whose remarks upon Dr. Flint appear in another column.

THE FOURTH ANNUAL COMMENCEMENT of the Hospital Medical College of Evansville, Ind., was held March 4, 1886. The degree of M.D. was conferred on four candidates.

WOMAN'S MEDICAL COLLEGE.—The Thirty-fourth Annual Commencement of the Woman's Medical College of Pennsylvania was held in the Academy of Music on the eleventh of March. There were thirty-three graduates.

HOWARD UNIVERSITY.—The commencement exercises of the Medical Department of the Howard University of Washington were held on March tenth. Twenty physicians and three dentists were graduated.

MASSACHUSETTS GENERAL HOSPITAL.—A. T. Cabot, M.D., and M. H. Richardson, M.D., have been appointed Visiting Surgeons to the Massachusetts General Hospital.

THE FIFTH COURSE OF THE CARTWRIGHT LECTURES of the Alumni Association of the College of Physicians and Surgeons of New York will be delivered by William Osler, M.D., Professor of Clinical Medicine at the University of Pennsylvania (Gulstonian Lecturer, London, 1885), at the hall of the Young Men's Christian Association, corner of Twenty-third Street and Fourth Avenue, at 8 P. M., as follows: The general subject is entitled "Certain Problems in the Physiology of the Blood," and is to be presented as follows:

Tuesday, March 23d: The so-called Third Corpuscle; the Blood-plate of Bizzozero; the Hæmatoblast of Hayem.

Saturday, March 27th: Degeneration and Regeneration of the Corpuscles.

Tuesday, March 30th: The Relation of the Corpuscles to the Process of Coagulation.

RAILROAD FARES TO THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—The rates given to the delegates to the American Medical Association meeting, May 4th, in St. Louis, have been fixed by the different railroad committees of the country, at one and one-third fares for the round trip. Delegates must pay full fare coming, and will receive on application, from the agent at the starting-point, a certificate, which, when signed by the Chairman of the Local Committee of Arrangements, will entitle them to the reduced return rate.

No reduced return ticket will be issued unless the purchaser can show a certificate issued by the agent from whom he purchased the going ticket, and signed by the Chairman of the Committee of Arrangements.

AN INTERNATIONAL CONGRESS OF HYDROLOGY AND CLIMATOLOGY, founded by the Society of Letters, Arts, and Sciences of Biarritz (*Biarritz-Association*), will be held at Biarritz from the 1st to the 8th of October, 1886, under the distinguished presidency of the Minister of Commerce, with the help of the Medical Hydrological Society of Paris, and the Meteorological Society of France. The aim of this Congress is to bring together in a country rich in thermal and sanitary stations, the learned men of all countries, who would study in common the questions bearing on hydrology and climatology. All societies and scientific associations, all learned men in France and abroad, are invited to take part in this meeting. At the close of the Congress, excursions will be made to the different thermal and sanitary stations in the Pyrenean district. A complete programme of the excursions, and the time which they will take, will be published later on.

Inquiries should be addressed to the Secretary-General, Dr. F. Garrigou, Toulouse.

MEDAL AWARDED TO PROF. HELMHOLTZ.—On the occasion of the tercentenary festival of the University of Heidelberg, a large gold medal was founded for contributions to the scientific knowledge of the human eye. It has been awarded to Professor Helmholtz, of Berlin, for his discovery of the ophthalmoscope.

NOTES AND QUERIES.

FURTHER INFORMATION WANTED.

I am engaged in the preparation of a "Compendium of the Surgical History of the War of the Rebellion," designed as a hand book for military surgeons, and desire to consider at some length "injuries of the bloodvessels," the remote effects of gunshot wounds in general, and the "ultimate results" as regards the functional utility of the limbs treated by conservation and excision in particular.

Inasmuch as many of the survivors have, doubtless, come under professional observation at this late date, it is hoped that the observers will render a service to military surgery, and to me personally, by communicating unpublished data, which will be gratefully acknowledged.

Respectfully,
GEORGE M. KOBER,
Acting Assistant Surgeon, U. S. A.

FORT BIDWELL, CAL.,
February 14, 1886.

THE following case has puzzled me greatly, and I would thankfully receive answers to subjoined questions: W. F., æt. twenty-nine, had several spasms when teething; between his third and fourteenth years he had no convulsions; looking back after first convulsion at fifteen, thought he had before first convulsion, in daytime, "dreamy spells," without unconsciousness, at time of occurrence explained by parents as stomachal vertigo before injury to be described, but afterward thought by family physician to be attacks of *petit mal*. At fifteen he was stabbed with a small knife on right side of lowest lumbar spine; stab nearly vertical, at edge of spine, 1" to 2" deep; pus pocketed; duration of open wound three weeks. About six hours after stab had severe nervous chill, and next morning an enlarged gland in groin (non-specific). First epileptic convulsion about two or three months after wound, taking place in bed, at night. Began use of bromides at once; used almost continuously since until 1882; does not think he received much benefit in controlling convulsions; rather damage to mental force, which improved after ceasing use of the drug. Has had a few (three) attacks in daytime, generally at night, once a month. About 1884 first bit tongue, and urinated during convulsion. Married 1882; has one child, which has no convulsions. Now taking bromides (Brown-Séquard's mixture) again. No hereditary explanation of attacks.

Queries: 1. Are convulsions caused by stab wounding nerves, cord, or meninges?

2. Probability of transmission to children?

3. Probability of benefit from surgical operation?

SUBSCRIBER.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 9 TO MARCH 15, 1886.

ROBERTSON, R. L., *First Lieutenant and Assistant Surgeon*.—Granted leave of absence for one month (Fort Ringgold, Texas). *S. O. 29, Department of Texas.*

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING MARCH 10, 1886.

BENSON, J. A., *Passed Assistant Surgeon*.—Resignation accepted, to take effect April 6, 1886, and leave of absence granted until that time. March 10, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE NAVY, FOR THE WEEK ENDING MARCH 13, 1886.

WOODS, GEORGE W., *Surgeon*.—Ordered to Navy Yard, Mare Island, to relieve W. K. Scofield, April 1.

SCOFIELD, W. K., *Surgeon*.—Detached from Navy Yard, Mare Island, and wait orders.